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IN THE

Supreme Court of the United States

OCTOBER TERM 1971

No.

SHELCO, INC. and THE SHELCO COMPANY,
Petitioners,

vs.

THE DOW CHEMICAL COMPANY and
HARRY G. SCHIERHOLZ & CO.,
Respondents.

SHELCO, INC. and THE SHELCO COMPANY,
Petitioners,

vs.

BOYLE-MIDWAY, INC., and
AMERICAN HOME PRODUCTS CORPORATION,
Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SEVENTH CIRCUIT

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Petitioners Shelco, Inc. and The Shelco Company (hereafter "Shelco") pray that a Writ of Certiorari issue to review a Judgment of the United States Court of Appeals for the Seventh Circuit in this action.

Opinions Below

The Opinion and Judgment Order of the Court of Appeals is reported at — F. 2d —; 173 U. S. P. Q. 451; printed in the Appendix hereto at pp. 1a-10a. The Order

of the Court of Appeals, filed June 5, 1972, denying Petitioners' Petition for Rehearing En Banc is printed in the Appendix hereto at p. 22a. The Findings and Conclusions adopted by the District Court are reported at 322 F. Supp. 485 and are printed in the Appendix hereto at pp. 23a-92a.

Jurisdiction

The Judgment of the Court of Appeals was entered on April 5, 1972. The jurisdiction of this Court is invoked under 28 U. S. C. § 1254(1).

Questions Presented

1. Can the alleged fraud on the Patent Office by a patentee (not a party to the action and not an officer or employee of the plaintiffs) be imputed to the plaintiffs who took no part in and had no knowledge of the prosecution of the applications resulting in the patent in suit?

2. Is it proper as a matter of law to imply a conclusion of fraud when the evidence is at most only "persuasive" that the patentee had knowledge of a prior use by others, and there is no evidence as to the materiality of such prior use?

3. Should a patent be declared invalid under the provisions of 35 U. S. C. §§ 184 and 185 when the first application filed abroad was filed more than six months after the filing in the United States, and differed from the original U. S. application merely by including broader claims?

Statutes Involved

35 U. S. C. §§ 184 and 185 read as follows:

"§ 184. *Filing of application in foreign country*

Except when authorized by a license obtained from the Commissioner a person shall not file or

cause or authorize to be filed in any foreign country prior to six months after filing in the United States an application for patent or for the registration of a utility model, industrial design, or model in respect of an invention made in this country. A license shall not be granted with respect to an invention subject to an order issued by the Commissioner pursuant to section 181 of this title without the concurrence of the head of the departments and the chief officers of the agencies who caused the order to be issued. The license may be granted retroactively where an application has been inadvertently filed abroad and the application does not disclose an invention within the scope of section 181 of this title.

The term 'application' when used in this chapter includes applications and any modifications, amendments, or supplements thereto, or divisions thereof.

"§ 185. *Patent barred for filing without license*

Notwithstanding any other provisions of law any person, and his successors, assigns, or legal representatives, shall not receive a United States patent for an invention if that person, or his successors, assigns, or legal representatives shall, without procuring the license prescribed in section 184 of this title, have made, or consented to or assisted another's making, application in a foreign country for a patent or for the registration of a utility model, industrial design, or model in respect of the invention. A United States patent issued to such person, his successors, assigns, or legal representatives shall be invalid."

Statement of the Case

These two actions for infringement of Perry patent No. 3,335,092 were consolidated for trial on the issue of validity. The patent, entitled "Oven Cleaner and Method of Using Same," describes and claims a highly successful water based caustic home oven cleaner packaged in an aerosol container which is used to apply a clinging foam to the roof and walls of a heated oven to effect excellent cleaning in a matter of minutes. No prior art home oven cleaner achieved these results.

The District Court wrote no opinion but simply mechanically adopted the findings proposed by the respondents (App. p. 23a), a practice criticized by this Court in *United States* v. *El Paso Gas Co.*, 376 U. S. 651, 656-7, 662-3 (1964).

Kenneth E. Perry, who developed this oven cleaner, had his own company, Winfield Brooks. Perry treated his oven cleaner invention as a trade secret and, with his own attorney, handled the entire prosecution of his applications in the Patent Office. The patent in suit was assigned to plaintiff, Shelco, Inc., only a few days before the patent issued. Shortly before trial, Shelco, Inc. sold its business to plaintiff, The Shelco Company. Thus, Shelco had no dealings whatsoever with the Patent Office and no control over the Patent Office proceedings.

District Court Findings 168 through 195 (App. pp. 76a-85a) are entitled "Fraud" and deal with the following four points:

> 1. The evidence was said to be "persuasive" that a prior art oven cleaner called "Beam" was known to Perry (FF 179), but not disclosed by him to the Patent Office.
>
> 2. Perry did not disclose to the Patent Office a single sale of his own oven cleaner called "Winbro 403" which was sold in bulk form in a 30-gallon drum more than one year before his first application (FF 108, 192).
>
> 3. Perry did not disclose to the Patent Office a Foster D. Snell report dealing with tests of his product on the shaved skin of rabbits (FF 187-9).
>
> 4. An affidavit filed in the Patent Office dealing with comparative tests with certain prior art Perlman patents was allegedly misleading (FF 191).

The only Findings relating to acts of Shelco, as distinguished from Perry, are 180 and 194. FF 180 (App.

p. 80a) states erroneously that the existence of Beam was kept from the Patent Office by Shelco and its predecessors. The evidence is undisputed that Perry and his own attorney, not Shelco or its predecessors, handled the entire prosecution in the Patent Office.

FF 194 (App. p. 85a) concludes that this suit was brought in bad faith because "Shelco knew or reasonably should have known" that material misrepresentations knowingly and deliberately had been made to the Patent Office.

Under section V (App. pp. 9a-10a), the Court of Appeals opinion even goes beyond the conclusions of the District Court which were written by the respondents, and does so without discussing the evidence.

There is simply no evidence in the record, and the District Court Findings do not support, the imputations of bad faith to Shelco in bringing these actions.

As for Perry's alleged knowledge of the prior use Beam oven cleaner, the evidence is not even "persuasive". A salesman named Hannon, who worked for Perry for a few months, did know about Beam, but the Finding (FF 178; App. p. 79a) that Hannon testified on deposition that he "could have" talked to Perry about Beam is a complete misquotation of Hannon's testimony and, admittedly, clearly erroneous. Both Perry and his attorney testified flatly that they had never heard of Beam until after these lawsuits started.

All claims in the patent in suit specify an oven cleaner and method of cleaning ovens consisting essentially of water and a small amount of alkali metal hydroxide packaged in an aerosol container so that the product is forced out of the container by a propellant (FF 13, 17). The more specific claims include also a glycol (humectant) and a foaming agent (surfactant). Claims 31 and 32 specify approximately 3% of sodium hydroxide as the cleaning agent, and that the humectant shall be propylene glycol.

Neither Beam nor Perry's Winbro 403 was packaged in an aerosol container with a propellant. Respondents' oven cleaner expert testified at the trial that because of this difference, Beam, when squirted on the oven walls, failed as an oven cleaner because the liquid ran off before it could do any effective cleaning. He further admitted that such materials packaged in plastic squeeze bottles, or in bottles with a finger-actuated pump spray, would always drip and run in the same manner. Thus, aerosol packaging in which the gaseous propellant under pressure ejected the material in the form of a clinging foam made the difference between success and failure for this type of oven cleaner.

The use of propylene glycol as a humectant, which is required by claims 31 and 32, permits Perry's oven cleaner to be used without rubber gloves, even though it contains 3% of caustic soda. The evidence shows that Dow rediscovered the "safening" effect of this same composition after Perry's oven cleaner had been on the market for two years, and respondent Dow even filed a patent application on it in 1965, extolling the safening effect of propylene glycol in such an aqueous caustic soda solution. The Court of Appeals opinion expressly ignored Shelco's contention about this combination, which was not taught by the prior art, and dismissed it as "an inconsequential difference."

The evidence is undisputed that neither Beam nor Winbro 403 was substantially identical in structure or function to the invention claimed.

The failure to disclose the Snell report to the Patent Office could not have been material in the Patent Office prosecution because the record shows that the Examiner already knew that millions of cans of Perry's oven cleaner Jifoam had been sold, and patentability could not turn on the question of the degree of its safety anyway. A second Snell report, which Perry also did not disclose to the Patent Office, covered tests by a number of women using the product as directed, and this report shows the product to be completely safe and non-irritating. The evidence further shows that Perry's product had been approved by Food and Drug and the FTC.

The affidavit relating to the Perlman patents spelled out in complete detail the exact procedures which were followed in making the comparative tests, and no information was withheld from the Patent Office Examiner. The fraud charge here is based solely on the *assumption* that the Examiner was either very stupid or could not read the affidavit and the Perlman patents for himself. Nothing was withheld.

In section IV (App. pp. 8a-9a), the Court of Appeals has held for the first time that a foreign application, filed more than six months after the filing of the application in the United States, violates 35 U. S. C. §§ 184 and 185, merely because the foreign application as filed contained broader claims than were presented in the U. S. application as originally filed.

Perry's original application was filed December 4, 1963 (FF 10; App. p. 25a). On April 20, 1964, Perry filed an amendment which added new claim 11 of broader scope than the original application claims 1 to 10 (FF 28; App. p. 33a). A license to file foreign applications was obtained from the Commissioner on January 8, 1964 (FF 167; App. p. 76a), and Perry filed his first foreign application in Canada on August 18, 1964 (FF 166; App. p. 76a). The Canadian application included a broadened claim corresponding to claim 11 which had been added by the amendment of April 20.

Thus, there was no disclosure of any scientific or technical information in the Canadian application which had not been contained in the U. S. application filed more than six months earlier.

Reasons For Granting The Writ

I.

The Action Of This Court Is Needed To Set Proper Standards For Determination As To What Constitutes A Proved Defense Of Fraud On The Patent Office

In the last few years it has become more and more fashionable for defendants to plead fraud on the Patent Office, unsupported by proof. As a result, many of the lower

courts tend to substitute their own personal impressions for clear and convincing proof of the elements of a fraud, such as a wrongful intent or the materiality of information withheld.

This Court in *Hazel-Atlas Glass Co.* v. *Hartford-Empire Co.*, 322 U. S. 238 (1944), *Precision Instrument Mfg. Co.* v. *Automotive Maintenance Machinery Co.*, 324 U. S. 806 (1945) and *Kingsland* v. *Dorsey*, 338 U. S. 318 (1949) has correctly emphasized in the past the uncompromising duty of parties dealing with the Patent Office to report all facts concerning possible fraud or inequitableness underlying the applications in issue. There is no doubt that persons prosecuting applications in the Patent Office should be candid and scrupulously honest in their dealings with the Examiner. In these older cases, either the wrongful intent or the reprehensible nature of the acts which constituted the fraud was fully proved.

In many present-day situations, however, an intent to mislead has been inferred where information known to the applicant was not disclosed to the Patent Office merely because it seemed to the lower court that the undisclosed information might have been relevant. One such recent case is the decision of the Third Circuit Court of Appeals in *Monsanto Company* v. *Rohm & Haas Co.*, 456 F. 2d 592 (1972), *cert. denied* June 19, 1972, in which Judge Kalodner correctly pointed out in a dissenting opinion that there was no clear and convincing proof that information not disclosed to the Patent Office would have made any difference in the granting of the patent in suit. Both lower courts in *Monsanto*, without any proof of the fact, concluded that the withheld information would have been material to patentability, and then implied an intent to defraud the Patent Office. This conclusion was reached in spite of testimony by the patent solicitor explaining why he did not consider it pertinent to include in the affidavit filed in the Patent Office all of the 899 tests which had been made.

As aptly stated in *Armour & Co.* v. *Wilson & Co.*, 274 F. 2d 143, 148 (7 Cir. 1960):

> "It is easy to make charges of fraud, but the law rightfully insists that before legal rights may be based upon such charges, they must be established by clear and convincing evidence. The burden is on the party making charges of fraud to establish same by clear and definite proof."

The Court of Customs and Patent Appeals, in its only decision dealing with fraud on the Patent Office, has also followed this "clear and convincing evidence" rule. See *Norton* v. *Curtiss*, 433 F. 2d 779, 791-7 (1970). Some lower courts, however, have overlooked or ignored these requirements, including the Third Circuit Court of Appeals in *Monsanto* and the Seventh Circuit Court of Appeals in this case.

In the present case, both lower Courts have brushed aside the requirements of clear and convincing evidence to prove a fraud in the following respects.

The Court of Appeals first concluded (App. p. 9a) that "(1) Perry's purported invention was copied from the Beam oven cleaner." Even the District Court Findings failed to support this conclusion. The District Court found that the evidence was "persuasive" that Perry knew about Beam, but, even that "persuasive" evidence was based on a clearly erroneous finding (FF 178) which misquoted Hannon's deposition testimony (*supra*, p. 5).

In addition, this conclusion ignores the undisputed fact that Beam was not packaged in an aerosol container, and because of this difference failed as a home oven cleaner when tested by respondents' oven cleaner expert.

Next, the Court concluded (App. p. 9a) that "(2) Perry had deliberately withheld information from the patent examiner which was relevant to the application." This can only refer to the undisclosed Snell report indicating that Perry's oven cleaner was irritating on the shaved skin of rabbits. Neither the District Court Findings nor the evidence in the case reveal how this could possibly have been material to

the patentability of the oven cleaner. The Court of Appeals, in concluding this report to be "relevant", was substituting its own impressions for proof.

The Court next concluded (App. p. 10a) that "(3) Perry had deliberately misrepresented to the patent examiner facts which were relevant to the application." This can only refer to the affidavit covering tests relating to the cited Perlman patents. The procedures used in these tests were accurately and completely stated in the affidavit. The Examiner was technically trained and fully capable of reading and understanding the teachings of the Perlman Patents. Neither the District Court Findings nor the Court of Appeals decision suggests how these circumstances could possibly constitute a misrepresentation of relevant facts to the Examiner.

Finally, the Court concludes (App. p. 10a) "(4) Perry and Shelco, Inc. brought this lawsuit in bad faith because they knew or reasonably should have known that the patent was invalid." This conclusion is again wholly unsupported by any proof. Perry obviously is not a party to this action and did not bring this lawsuit. Shelco, Inc. had nothing whatever to do with the prosecution of the applications in the Patent Office, and there is simply no evidence in the record suggesting that Shelco, Inc. knew the patent was invalid when it brought this lawsuit. Furthermore, if Shelco, Inc. "reasonably should have known" that the patent was invalid, that is insufficient as a matter of law to satisfy the "clear and convincing evidence" requirements of the law for proving a fraud.

The patent bar and the lower courts urgently need the guidance of this Court on what should constitute proof of unclean hands or fraud on the Patent Office, a subject which this Court has not ruled upon directly since *Corona Co.* v. *Dovan Corp.*, 276 U. S. 358 (1928) at pages 373-4. Is knowledge of a prior use by a patent applicant proved by evidence which is merely "persuasive"? Should a Court, without proof, impute allegedly fraudulent acts to a plaintiff who had no knowledge of the prosecution in the Patent Office? Is it proper for a Court to substitute its own impressions for proof as to whether withheld information is material to patentability?

Until these questions are answered by this Court, the patent bar has no other choice than to inundate the Patent Office with all of the information they know about a subject, no matter how trivial or immaterial it may be, in order to avoid a possible later charge of fraud by inference.

II.

Claims 31 And 32 Should Be Held Valid

Claims 31 and 32 require the combination of propylene glycol in a dilute water based sodium hydroxide solution packaged in an aerosol container including a propellant. No prior art employs or suggests this combination. This claimed combination, as pointed out in the patent specification, permits the oven cleaner to be used by the housewife without wearing rubber gloves. There is no prior art in the record from which this unexpected safening effect could have been predicted. Respondent, Dow, more than two years after Perry's invention, rediscovered the "safening" effect of this combination and even filed its own patent application on it. Naturally, the District Court Findings, written by respondents, are silent on this evidence in the record.

The Court of Appeals committed serious error in expressly ignoring the limitations of these claims (App., p. 8a). In doing so, both lower courts confused the different functions of the claims and of the specification of a patent. It is fundamental that it is the claims which "measure the invention." *Smith* v. *Snow,* 294 U. S. 1, 11 (1935). The patent specification, as its only example, gives a formula including 20% of propylene glycol. The patent specification states that propylene glycol is "highly preferred" as the humectant. The patent specification further points out that such a combination is surprisingly less irritating to a normal person's skin, thus making it possible for this caustic oven cleaner to be handled without rubber gloves.

It follows from the foregoing that if claims 31 and 32 are valid, there can have been no fraud on the Patent Office by Perry or anyone else.

III.

The Court Of Appeals Decision Regarding §§ 184 And 185, If Allowed To Stand, Could Have Far-Reaching Adverse Effects On The Patent System

For the first time in any Court, this case holds that the filing of a foreign application violates 35 U. S. C. § 184, merely because it differed from the original U. S. application by having one or more broader claims added to it.

The purpose of §§ 184 and 185 was to prevent inadvertent disclosure of information which might prove detrimental to the safety and welfare of this country.* The six-month period provided in § 184 before foreign applications could be filed without a license was designed to permit the Atomic Energy Commission, the Secretary of Defense, and other governmental agencies to invoke 35 U. S. C. § 181 and place the patent application under a secrecy order, if it contained information, the disclosure of which abroad might be detrimental to the national security. The Commissioner of Patents was authorized by the statute to grant licenses to file foreign applications in a shorter period if he determined that the information in the application was not detrimental to the national security.

The Court of Appeals in this case relies upon its own decision in *Beckman Instruments, Inc.* v. *Coleman Instruments, Inc.*, 338 F. 2d 573 (7 Cir. 1964). In that case, the applicant had filed two successive applications, the second application plainly including in its specification subject matter which was not disclosed in the first application. The Court held that the two applications represented two different inventions, and that it was improper to file a foreign application corresponding to the second application without obtaining a license or waiting the prescribed six months after the filing of the second application.

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* See the hearings before Subcommittee No. 4, Committee on the Judiciary, House of Representatives, 81st Congress, Second Session, on HR 6389 (1950).

The Court of Appeals in this case now goes further, saying, in effect, that the slightest change in wording in the filing of the foreign application, i.e., any amendment or change whatsoever, is a violation of § 184. Here again, the Court has confused the specification and claims of the patent. There is no dispute that the newly added claim which was included in the Canadian application reads on the specification of the original U. S. application as filed. The addition of this broader claim did not include any information which was not already included in the original application. In fact, it has been the common practice of patent attorneys for a great many years to redraft claims when filing foreign applications. Indeed, this is necessary in most foreign countries because their patent laws require different forms of claims than are used in the United States.

The impact of this decision, therefore, can only mean, if it is allowed to stand, that the Commissioner of Patents will in the near future receive a veritable flood of applications for retroactive licenses permitted by § 184. This decision should not be allowed to stand for this reason alone.

CONCLUSION

The Petition for Writ of Certiorari should be granted to resolve these questions important to the patent system.

Respectfully submitted,

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APPENDIX

APPENDIX

Appendix

Opinion and Order of the Court of Appeals

IN THE

UNITED STATES COURT OF APPEALS

FOR THE SEVENTH CIRCUIT

Nos. 71-1061 and 71-1062

SEPTEMBER TERM, 1971 SEPTEMBER SESSION, 1971

SHELCO, INC., and THE SHELCO COMPANY,
Plaintiffs-Appellants,

vs.

THE DOW CHEMICAL COMPANY and
HARRY G. SCHIERHOLZ & CO.,
Defendants-Appellees.

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Plaintiffs-Appellants,

vs.

BOYLE-MIDWAY, INC. and AMERICAN
HOME PRODUCTS CORPORATION,
Defendants-Appellees.

APPEALS FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.
Nos. 67-C-1393, 67-C-2190
RICHARD B. AUSTIN, *Judge*

April 5, 1972

Before SWYGERT, *Chief Judge,* KILEY and FAIRCHILD, *Circuit Judges.*

SWYGERT, *Chief Judge.* This is an appeal from a final judgment in a patent infringement action which held that

the patent in suit, United States Patent No. 3,335,092, was invalid and which also awarded attorneys' fees and costs to the defendants. The only issues raised are whether the district court committed reversible errors in holding the patent invalid and in awarding attorneys' fees to defendants. We affirm the district court in both respects.

The patent at issue relates to the purported invention by Kenneth E. Perry of a chemical composition and a method for its use for the cleaning of baked-on soil from ovens. Although the patent contains thirty-two claims, Shelco, Inc., the plaintiff and assignee of the patent, asserts only the validity of Claims 5, 19, 31 and 32 on this appeal. Reduced to its essential elements, the invention claimed in Claim 19 amounts to an oven cleaning product that is an aqueous solution at least 50 per cent water by weight containing 3 per cent sodium hydroxide by weight as well as an unspecified quantity of any compatible surfactant and an unspecified quantity of either a glycol or glycerol humectant, which solution is to be applied from an aerosol container to a hot oven or grill. Claim 32 is the same except that it specifies propylene glycol in an unspecified amount as the humectant to be included in the product. Claim 5 claims the invention of a method of use of the product described in Claim 19 in which the product is to be aerosol-sprayed upon an oven or grill which is "at an [unspecified] elevated temperature," leaving the product on the hot oven for an unspecified time interval and then removing it. Claim 31 describes the same method for using the product set out in Claim 32.

The district court held that Claims 1 through 6, 14, 16 through 19, 26 and 28 through 32 of the patent were invalid on grounds of anticipation (35 U. S. C. § 102), obviousness (35 U. S. C. § 103) and indefiniteness (35 U. S. C. § 112). It further held that the patent was void in its entirety under 35 U. S. C. §§ 184 and 185 (filing application in a foreign

country without a proper license to do so). Since Shelco, Inc. does not challenge the propriety of the district court's determination of invalidity as to any claims other than numbers 5, 19, 31 and 32, we limit our discussion to those enumerated claims.

It is settled that, as a general rule, a purported invention is not anticipated "unless all of the same elements are found in exactly the same situation and united in the same way to perform an identical function" in a previously known product. *Illinois Tool Works, Inc.* v. *Sweeheart Plastics, Inc.*, 436 F. 2d 1180, 1182-83 (7th Cir. 1971); *Amphenol Corp.* v. *General Time Corp.*, 397 F. 2d 431, 438 (7th Cir. 1968). However, when the only features distinguishing the purported invention from a prior art product are insubstantial, the earlier may properly be said to anticipate the later product. As we said in *Deep Welding, Inc.* v. *Sciaky Bros., Inc.*, 417 F. 2d 1227, 1234 (7th Cir. 1969), "[I]t is sufficient for anticipation 'if the general aspects are the same and the difference in minor matters is only such as would suggest itself to one of ordinary skill in the art.'"

The record here reveals the existence of three prior art products which, we believe, justify the district court's finding that Perry's purported invention was anticipated. The first such product which anticipated Perry was an oven cleaner made and sold by Capitol Packing Co. of Melrose Park, Illinois to Bissell, Inc. of Grand Rapids, Michigan. The unpatented oven cleaner bought and distributed by Bissell was first sold in November 1962, some eleven months prior to Perry's December 4, 1963 application. The formula pursuant to which the Bissell product was made from its beginning was expressed as follows (in percentages of its weight):

Sodium orthosilicate	7%
Sole-terge 325	7%
TS-2S	2%

Safrol	0.075%
Water	83.925%

The evidence before the trial court established that sodium orthosilicate is a physical mixture of sodium hydroxide and sodium metasilicate in a proportion of 40-60 respectively by weight so as to generate a concentration of 2.8 per cent free sodium hydroxide by weight in the foregoing formula. It was also established that the remaining ingredients of the Bissell product included compatible surfactants and a glycol humectant. According to the instructions for its use, Bissell was sprayed from an aerosol can upon a cold oven. However, the district court specifically found that Bissell was suitable for use on a hot oven.

We agree that Bissell anticipates Perry. The only differences between Bissell and the Claims 5 and 19 product and method are a miniscule difference in the amount of free sodium hydroxide (2.8 per cent in Bissell and 3 per cent in Perry) and the recommended application to a cold oven in Bissell and to a heated oven of unspecified temperature in Perry. Those differences were inconsequential, and Bissell anticipated Perry's broader Claims 5 and 19. The use of propylene glycol as specified in Claims 31 and 32 as the humectant is an inconsequential difference which does not survive the anticipatory aspects of Bissell.

Perry's purported invention is also anticipated by an unpatented oven cleaner made and sold by Beam Chemical Company from 1957 to the present. Beam was sold with a glass or plastic spray bottle and with instructions to apply it to a warm oven. The formula used by Beam on April 8, 1960 and for some time before and after that date produced a solution containing more than 50 per cent water by weight, about 2.8 per cent sodium hydroxide by weight, compatible surfactants and a glycol or glycerol humectant which, occassionally during the period 1957 through 1962, was sometimes propylene glycol. Thus, the only real dis-

tinction between Beam and Perry was that Perry was aerosol-dispensed while Beam was dispensed by a so-called Windex-type sprayer. That difference is inconsequential as the district court found and as evidenced by Perry's statement in his patent that, "The same results were achieved by spraying the cleaner of the example on a hot oven with a conventional pressure atomizer." Beam therefore anticipated the patent in suit.

Finally, Perry's product was sold and used more than one year prior to the application, thereby calling into effect the statutory bar of 35 U. S. C. § 102(b). In October 1962 Perry made and sold a 30 gallon drum of the oven cleaner claimed in the patent without including the furfuryl alcohol "catalysts" required by some claims of the patent. The solution was more than 50 per cent water by weight and contained 3 per cent sodium hydroxide, a humectant and a surfactant. Also, not later than December 1962, Perry made a 20 gallon batch of the same oven cleaner which was placed in plastic squeeze bottles and used for testing purposes, except for one such bottle which was given to a home economist with Vaugn Electric Co. of Somerville, Massachusetts, to cultivate future orders for the oven cleaner. No confidentiality restrictions were imposed. The sale of this oven cleaner (called "Winbro 403" at the time of the sale) and the giving of one bottle to Vaugn Electric's home economist constituted a public use or sale of the invention more than one year prior to the application. That transaction barred the granting of the patent pursuant to section 102(b). *Frantz Mfg. Co.* v. *Phenix Mfg. Co.*, Nos. 18975 and 71-1069 (7th Cir., March 16, 1972).

II

Had the applicable prior art described in the foregoing not anticipated the Perry oven cleaner, *i.e.*, had it not been sufficiently identical to anticipate, it is clear that Perry's

purported invention would have been obvious by the teachings of the above described oven cleaners. Given a prior art which included Bissell and Beam, the obviousness of Perry cannot be questioned. Moreover, the prior art tending to establish obviousness is even more extensive than that which established anticipation.

The oldest example of the prior art which renders Perry obvious is a paragraph in a home reference work entitled HENLEY'S FORMULAS, PROCESSES AND TRADE SECRETS (1948) which stated:

> To Clean A Gas Stove—An easy method of removing grease spots consists in immersing the separable parts for several hours in a warm lye [sodium hydroxide], heated to about 70°C. (158°F.), said lye to be made of nine parts of caustic soda and 180 parts of water [5% sodium hydroxide and 95% water]. These pieces, together with the fixed parts of the stove, may be well brushed with this lye and afterwards rinsed in clean, warm water. The grease will be dissolved, and the stove restored almost to its original state.

Several prior art items were patented in the United States, of which only two were considered by the patent office. Those two were United States Patents Nos. 3,031,408 and 3,031,409 issued April 24, 1962 to one Perlman. They covered an anhydrous, reduced caustic oven cleaner which contained 2 to 3 per cent of sodium or potassium hydroxide, surfactants and glycol humectants. The '409 patent also taught that spraying some such compounds from an aerosol package produces a foam. Although the '408 and '409 patents do not require application to a heated oven, the products described by both patents were suitable for such application.

At least two other patents not considered by the patent office properly constitute relevant prior art with regard

to the Perry patent. United States Patent No. 3,079,284, issued February 26, 1963 to one Boucher, disclosed an oven cleaner more than 50 per cent water including sodium hydroxide in amounts as low as 5 per cent which was to be applied to an oven which was then heated for catalytic effect. United States Patent No. 2,992,995, issued July 18, 1961 to one Arden, disclosed an aqueous cleaning solution with sodium hydroxide in as low an amount as 4 per cent where items to be cleaned were dipped in the solution heated to temperatures over 200°F. The latter patent also divulged the use of glycols and glycerols as humectants.

The district court also found that the separate work of John J. Sullivan and John W. Seljan constituted prior art which was relevant to Perry and rendered it obvious. We agree, but we do not discuss those items of prior art since their effect is cumulative.

Based on the prior art described above, one skilled in the art of liquid oven cleaners would know or could easily discover that aqueous solutions for such purposes can be effective at concentrations of caustic less than 10 per cent by weight, that surfacants and humectants are useful ingredients therein, that glycol and glycerol humectants are common in such solutions, that they may be sprayed from aerosol cans or plastic or glass atomizers of various types, that some such solutions spray as a foam from aerosol cans and that heat is a useful catalyst in the cleaning reaction produced by the application of such products to burned-on oven soil. We believe, as did the district court, that a person ordinarily skilled in the art of liquid oven cleaners would find Perry's product and method obvious.

III

A review of the patent office file relating to the application which became United States patent No. 3,335,092, together with a reading of the patent itself, justifies the district court's determination that the patent is void for

indefiniteness under 35 U. S. C. § 112. The patent states no invention over the prior art. We believe that the reason no such statement can be found in the patent is because there was no invention involved. Conflicts between Perry's testimony herein and the claims and specifications of the patent make clear that what it is that was supposed to have been invented remains unclear. Perry's patent states that the method of application of the oven cleaner as between conventional atomizers and aerosol cans is unimportant as to the result. At trial, however, Shelco, Inc. claimed that solving the problem of aerosol packaging of caustic oven cleaner solutions was the invention. But the patent neither describes the nature of such a problem nor its solution and therefore fails for indefiniteness since no other invention has been asserted or identified in the patent. Shelco has also half-heartedly asserted that the invention consists of the use of 20 per cent propylene glycol as a humectant in the cleaning solution. We ignore that contention since the patent does not identify the use of propylene glycol as the invention, nor does it specify the amount of propylene glycol to be used, and it specifically states that the "invention" it encompasses includes compositions similar to the example which contain no humectant at all.

IV

35 U. S. C. § 184 prohibits the filing of an application for a patent in a foreign country prior to six months after the filing of an application in this country where the subject matter of the application is the same and the invention was made in this country except when authorized by a license from the commissioner of patents to apply for a foreign patent. 35 U. S. C. § 185 provides that a United States Patent shall be invalid where a foreign application for the same invention was made without the proper license. The district court determined that the instant patent was invalid pursuant to 35 U. S. C. §§ 184 and 185. We agree.

The basis for the district court's determination that Perry violated 35 U. S. C. § 184 was its specific finding of fact that the only license applied for with respect to the invention claimed was issued in January 1964. At that time Perry's application for a United States patent, upon which the license was based, claimed that the presence of a furfuryl alcohol catalyst was essential to the invention. The license specifically stated that subsequent amendments to the original United States patent application were not authorized by it for filing abroad. Not until April 20, 1964 did Perry file any claim with the U. S. Patent Office which did not require the presence of the catalyst. However, Perry's original foreign application claimed invention in oven-cleaning compositions which did not include the catalyst and thus exceeded the license.

It is clear to us, therefore, that Perry violated the provisions of 35 U. S. C. § 184 and that the district court's declaration of the invalidity of the patent pursuant to 35 U. S. C. § 185 was justified. *Beckwith Instruments, Inc.* v. *Coleman Instruments, Inc.*, 338 F. 2d 573 (7th Cir. 1964).

V

35 U. S. C. § 285 authorizes district courts to award attorney's fees to the prevailing party in "exceptional cases." The basis for the district court's determination that this was an exceptional case was its finding that Perry had practiced fraud on the patent office in several respects and that he and Shelco had otherwise acted improperly in that:

(1) Perry's purported invention was copied from the Beam oven cleaner;

(2) Perry had deliberately withheld information from the patent examiner which was relevant to the application;

(3) Perry had deliberately misrepresented to the patent examiner facts which were relevant to the application;

(4) Perry and Shelco, Inc. brought this lawsuit in bad faith because they knew or reasonably should have known that the patent was invalid.

Fraud on the patent office or bad faith in asserting the validity and infringement of a patent is ample justification for holding that a patent case is an exceptional one within the intendment of 35 U. S. C. § 285. *Monolith Portland Midwest Co.* v. *Kaiser Aluminum & Chem. Corp.*, 407 F. 2d 288, 294 (9th Cir. 1969); *see Townsend Co.* v. *M.S.L. Indus.*, 359 F. 2d 814 (7th Cir. 1966). Our inquiry must therefore be directed to whether the district court's determinations of fraud and bad faith were clearly erroneous. FED. R. CIV. P 52(a); *see Townsend Co.* v. *M.S.L. Indus., supra* at 817.

After reviewing the evidence upon which the district court based its findings, we conclude that the findings of fraud and bad faith on the part of Perry and Shelco, Inc. cannot be said to be clearly erroneous. That being the case, the district court acted properly within its discretion in declaring this case to be "exceptional" and thereupon awarding attorneys' fees to the defendants.

The judgment of the district court is affirmed.

A true Copy:

Teste:

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Clerk of the United States Court of Appeals for the Seventh Circuit.

Petition for Rehearing

IN THE
UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT

Nos. 71-1061 and 71-1062

SHELCO, INC., and THE SHELCO COMPANY,
Plaintiffs-Appellants,

vs.

THE DOW CHEMICAL COMPANY and
HARRY G. SCHIERHOLZ & CO.,
Defendants-Appellees.

SHELCO, INC., and THE SHELCO COMPANY,
Plaintiffs-Appellants,

vs.

BOYLE-MIDWAY, INC. and AMERICAN
HOME PRODUCTS CORPORATION,
Defendants-Appellees.

APPEALS FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.
The HONORABLE RICHARD B. AUSTIN, *Judge*

PETITION FOR REHEARING AND FOR REHEARING EN BANC

Shelco, Inc. and The Shelco Company, Appellants, petition for a rehearing of the following issues:

1. Did the lower Court err as a matter of law in holding that Shelco brought this lawsuit in bad faith?

2. Did the lower Court err as a matter of law in holding that Perry (the inventor who was not and is

not a party to this lawsuit) practiced fraud on the Patent Office in obtaining the patent in suit?

3. Did the lower Court err as a matter of law in holding invalid claims 31 and 32 of the Perry patent in suit?

This Court's affirmance on these first two issues lets stand an award against Shelco (not Perry) of attorneys' fees and expenses which the defendants assert are over $400,000 (App. 132-137). It also exposes Shelco (not Perry) to possible treble-damage liability on defendants' anti-trust counter-claims which are premised on averments of Shelco's purported bad faith in bringing this suit and Perry's purported fraud on the Patent Office (App. 14-16 and 25-27).

Shelco also petitions for a rehearing *en banc* of these issues under Rule 35 of the Federal Rules of Appellate Procedure, which authorizes rehearing *en banc* "when consideration by the full court is necessary to secure or maintain uniformity of its decisions." This Court's decision on these first two issues is in direct conflict with and overrules, *sub silentio*, this Court's previous decision in *Scott Paper Company* v. *Fort Howard Paper Company*, 432 F. 2d 1198 (7 Cir. 1970).* In *Scott Paper*, this Court held:

1. "A finding that a patent was procured by fraud or unclean hands must be based on 'clear, unequivocal and convincing' evidence" (432 F. 2d at 1204); and

2. No finding of fraud or unclean hands in the procurement of a patent will be made unless "the non-disclosed prior art is almost identical with the patentee's invention" (432 F. 2d at 1205).

We respectfully submit there is no credible evidence, let alone clear and convincing proof, to support a finding of bad

---

* See also this Court's decision in *Wen Products, Inc.* v. *Portable Electric Tools, Inc.*, 367 F. 2d 764 (7 Cir. 1966).

faith on the part of Shelco, or a finding of fraud on the part of Perry, findings restated on pages 8 and 9 of this Court's opinion. The opinion does not discuss the evidence on those findings, notwithstanding that Dow's brief admits that key finding 178, as to whether or not Perry had knowledge of Beam in 1962, is based upon evidence that "is not clear" (p. 18, footnote).

Furthermore, even if the evidence here supported the charge that the patentee, Perry, had been guilty of fraud, the decision holding Shelco liable for attorneys' fees (allegedly over $400,000), despite the complete lack of any probative evidence that Shelco knew or even could have known of the alleged fraud by Perry, is completely without precedent and totally unjust.

If this decision is allowed to become the law of this Court, the floodgates will be opened to claims for recovery against patent owners based on charges of fraud by a patentee even if the patent owners, at the time of bringing the suit, were completely unaware of the asserted facts on which such allegations of fraud are based.

I.

Shelco Did Not Bring This Suit In Bad Faith

There is no evidence that Shelco had any knowledge of the fraud charged against Perry. Charge "(4)" on page 9 of this Court's decision incorrectly states that Perry and Shelco, Inc. brought this lawsuit in bad faith. Shelco is erroneously equated with Perry throughout Section V of this Court's opinion. The Court appears to have overlooked the fact that Perry, the patentee, is not one of the plaintiffs and is not a party to this suit. Perry is not, and never was, an officer or employee of Shelco. The record is entirely clear that the plaintiff, Shelco, Inc., and its predecessor, The

Shelco Company had no part in the preparation or prosecution of the applications which resulted in the patent in suit (App. 488-490). There is not one scrap of evidence to suggest that Shelco or its President, Carpenter, had any knowledge in 1967 when Shelco brought these suits either

(a) that the patent was invalid as stated in this Court's decision, or

(b) that the patent was obtained as a result of fraud or material misrepresentations.

The undisputed facts are that from 1963, Shelco had a contract (App. 1082-96) with Perry's company, Winfield Brooks, which treated Perry's oven cleaner invention as a trade secret even from Shelco. The Patent Office prosecution was handled by Perry and his own attorney, Sewell Bronstein (App. 489). The commercial Jifoam oven cleaner was made up in bulk by Winfield Brooks who shipped it to aerosol packagers who, in turn, packaged and labeled the product in aerosol containers for Shelco. Shelco's part of the operation was purely a matter of advertising, promotion and sales (App. 486-7, 580-1). The patent in suit was assigned to Shelco only a matter of days before the patent issued.

Of the 195 findings of the District Court (which were written by defendants' counsel), only FF 168-195 relate to the fraud issue. Of these, FF 180 and 194 are relevant to Shelco, as distinguished from Perry and Winfield Brooks. FF 180 incorrectly says the existence of Beam was kept from the Patent Office by Perry, Shelco and its predecessors. Shelco had no dealings whatever with the Patent Office and no control over the Patent Office proceedings (App. 489). Points (1), (2) and (3) at pages 8 and 9 of this Court's opinion in no way relate to Shelco.

FF 194 is not really a fact finding but a conclusion, totally unsupported by the other findings of the District Court or

by the evidence. Further, even if Shelco "reasonably should have known" (as stated in FF 194), this is not sufficient as a matter of law to prove by clear, unequivocal and convincing evidence that Shelco brought this suit in bad faith.

Therefore, Shelco, when it brought suits in 1967 against Dow, et al and against Boyle-Midway, et al, did not act in bad faith. Even if Perry had been guilty of fraud, which he was not, there is no basis whatever for imputing such fraud to Shelco here so as to charge them with over $400,000 in attorneys' fees and expose Shelco to possible treble-damage anti-trust liability for allegedly bringing this suit in bad faith.

II.

Perry Did Not Obtain The Patent In Suit By Fraud

This Court's decision relies on three prior uses as "anticipations" under 35 U.S.C. § 102(b). The first, a Bissell oven cleaner, was used only on a *cold* oven and was packaged in a container which instructed the housewife to "Be sure oven is cool." (PX 68, DX 106). Bissell, therefore, clearly was not an anticipation of the method claims (this was flatly admitted in Dow's brief at page 26). Furthermore, it came to light immediately before trial and after discovery in this litigation was closed (App. 171), and there is not even a contention that it was previously known to Perry. Thus, Bissell could not be involved in the fraud charges.

The second prior use relied upon by the Court as an "anticipation" was Beam, which was never packaged in an aerosol container as required by the patent claims until after the patentee's product was on the market. In fact, Beam was never successfully packaged in an aerosol container. This was tried in 1964 after plaintiffs' Jifoam was on the market, but the Beam cans leaked, burst their seams and even exploded (App. 189-190, 199-203). The evidence is

undisputed that the use of an aerosol dispenser, because it resulted in a foam, made the difference between success and failure in a home oven cleaner, even though this Court's decision dismisses this difference as "inconsequential".

The third prior use called an "anticipation" was the sale by Perry's company, Winfield Brooks, of 30 gallons of "Winbro" cleaning solution packaged in bulk in a drum and sold to a local government cafeteria with no instructions how to use it (FF 108, DXs 83A-B, App. 1543-4, 280-1). Some unidentified man gave Mrs. Hall of Vaughn Electric some oven cleaner to experiment with prior to December 1962, but in a plastic bottle without any spray applicator (App. 205-6). There is no finding and no evidence of any sale of any "Winbro" oven cleaner packaged in an aerosol container as required by the patent claims until after December 4, 1962, the cut-off date for any statutory bar (§ 102(b)) to the Perry application, filed December 4, 1963.

The decision recognizes (p. 3) that an invention is not anticipated " 'unless all of the same elements are found in exactly the same situation and united in the same way to perform an identical function' in a previously known product", and yet dismisses aerosol packaging as "insubstantial" and "inconsequential". The undisputed evidence is that aerosol packaging for a home oven cleaner with the resulting foam makes the difference between success and failure. Boyle-Midway tested Beam in a Windex-type (non-aerosol) bottle in 1958 and concluded that it *"fails as an oven cleaner* because it is a very mobile liquid. It runs off vertical and inverted surfaces before it has much chance to react . . ." (emphasis added; DX 579, App. 1660). Boyle-Midway's oven cleaner expert at the trial admitted that oven cleaners sprayed from squeeze bottles would always drip and run:

"Q. And you mean that no matter what you spray from them, they are going to run?"

"A. They will, sir, yes." (App. 474)

Boyle-Midway's brand manager, Treumann, testified that in 1963-64 the major threat to Easy-Off paste oven cleaner was "the true aerosol" product (App. 555).

Two years ago in the *Scott Paper* case, this Court held that failure to reveal prior art which was held by the Court to invalidate the patent in suit for obviousness, but was not "almost identical with the patentee's invention", did not constitute the required proof of fraud by clear, unequivocal and convincing evidence.

The decision here is now saying that, contrary to the rule of *Scott Paper,* a failure to reveal prior art to the Patent Office is automatically fraud, even when the prior art is not substantially identical in structure and function.

Heretofore, this Court has held that each element of the fraud, including intent to deceive and materiality of the withheld information, must be proven by clear, unequivocal and convincing evidence. The present decision ignores this requirement.

The claims of Perry's patent were allowed by the Patent Office on the argument that aerosol packaging was an important feature of the invention. This Court may differ with the Patent Office and with appellants as to the importance of this feature which turned failure into success. But Perry believed in the importance of aerosol packaging, and the Court is not justified in its *inference* that Perry intended to deceive the Patent Office by not revealing his prior bulk sale of Winbro 403. Perry did not even make the invention claimed in his patent until the early part of 1963, less than a year before he filed.

III.

The Conclusion That Perry Copied His Invention From Beam is Contrary to the Evidence

The charge on page 8 of the Court's opinion that Perry's "invention" was copied from Beam is not even supported

by the fact findings in this case and is contrary to the evidence. One does not have to be a chemist to see from a comparison of Perry's original oven cleaner formula with the alleged 1962 formula of Beam (Addendum B, our main brief) that one was not copied from the other. Perry's claimed invention was an oven cleaner "consisting essentially" of certain stated ingredients and packaged in an aerosol container, with the important and vital result that it sprayed a *foam*. Beam was not such a product (FF 62).

Further, there is no evidence, much less clear and convincing proof, that Perry even knew about Beam in 1962 or 1963, and the evidence is to the contrary.

Perry testified that he had never heard of Beam until after this lawsuit started (App. 357, FF 177).

Perry's patent attorney, Bronstein, swore that he had never heard of Beam until after this lawsuit started (App. 627).

There is no doubt that Hannon, a salesman who worked briefly for Perry in 1962-63, knew there was an oven cleaner called Beam. There is equally no doubt that Hannon, who in this period had all of the dealings for Winfield Brooks with Mrs. Hall and Vaughn Electric, furnished to Mrs. Hall in February 1963 a data sheet that had instructions which had been copied from a Beam label.

However, there is no evidence whatsoever that Hannon ever revealed the existence of Beam to Perry. The only finding of fact on this point, FF 178, states Hannon "testified that he 'could have' talked to Perry about Beam." Dow has admitted this finding to be erroneous (Dow brief, footnote p. 18). In the portion of Hannon's deposition to which this finding refers (App. 234; see also the full deposition testimony at 648), Hannon was not even being asked about Beam. Finding 179 concludes the evidence is "persuasive" that Hannon revealed Beam to Perry, but the evidence to such effect is not only not persuasive, it is completely

lacking. *A fortiori*, it is not "clear, unequivocal and convincing" as the law requires to prove fraud.

IV.

Claims 31 and 32 Should Be Held Valid

A. The Court's opinion expressly ignores Shelco's contention about the importance of using propylene glycol as required in claims 31 and 32, stating at page 7: "We ignore that contention since the patent does not identify the use of propylene glycol as the invention, nor does it specify the amount of propylene glycol to be used, and it specifically states that the 'invention' it encompasses includes compositions similar to the example which contain no humectant at all."

This statement fatally confuses the functions of the specification of a patent and the patent claims. It is the claims which "measure the invention", *Smith* v. *Snow*, 294 U. S. 1, 11 (1935). It is the function of the specification of the patent to describe the invention so that "any person skilled in the art . . ." can "make and use the same" and "set forth the best mode contemplated by the inventor of carrying out his invention", 35 U. S. C. § 112.

The Perry patent fully complies with these respective requirements. Claims 31 and 32 specify propylene glycol as the humectant and the specification of the patent gives a complete example of the preferred embodiment, containing 20% propylene glycol. The patent also states that "the use of propylene glycol is highly preferred" (col. 3, lines 44-45).

In ignoring the requirement of these claims for the use of propylene glycol because the patent states in the specification that humectants can be omitted, the Court has committed a serious error of law.

Claims 31 and 32 specify the combination of propylene glycol and dilute aqueous sodium hydroxide in an aerosol container with a propellant. No prior art uses or suggests this combination. This claimed combination permits the oven cleaner to be used without rubber gloves. Dow rediscovered the "safening" effect of this same composition and even filed a patent application on it in 1965 (App. 1187-93). Dow's accused oven cleaner copied this feature of Perry's invention, together with all of the other elements of the claimed combination. This combination is patentable and these claims should be sustained.

B. In section IV, this Court now holds for the first time that a foreign application filed *more than 6 months* after the U. S. application violates 35 U. S. C. §§ 184 and 185, merely because the foreign application contained broader claims than the U. S. application. There is no precedent for such a holding and it ignores the intent of the statutes as explained in *Blake* v. *Bassick Company*, 245 F. Supp. 635 (N. D. Ill. 1965).

V.

Conclusion

The Court's decision in this case, if not modified, will overrule its prior decision in *Scott Paper Company* v. *Fort Howard Paper Company*, 432 F. 2d 1198, 1204 (7 Cir. 1970), which required proof of each element of an alleged fraud to be by "clear, unequivocal and convincing evidence." It will also hold liable for attorneys' fees and possible anti-trust treble-damage claims a patent owner who had no knowledge of any alleged fraud.

The Court should grant the requested rehearing.

Respectfully submitted,

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Decision on Petition for Rehearing

UNITED STATES COURT OF APPEALS

FOR THE SEVENTH CIRCUIT

Chicago, Illinois 60604
Nos. 71-1061 and 71-1062
Monday, June 5, 1972

Before:

HON. LUTHER M. SWYGERT, *Chief Judge*
HON. ROGER J. KILEY, *Circuit Judge*
HON. THOMAS E. FAIRCHILD, *Circuit Judge*
ON PETITION FOR REHEARING

SHELCO, INC. and THE SHELCO COMPANY,
Plaintiffs-Appellants,

vs.

THE DOW CHEMICAL COMPANY and
HARRY G. SCHIERHOLZ & CO.,
Defendants-Appellees.

SHELCO, INC. and THE SHELCO COMPANY,
Plaintiffs-Appellants,

vs.

BOYLE-MIDWAY, INC. and AMERICAN
HOME PRODUCTS CORPORATION,
Defendants-Appellees.

On consideration of the petition for rehearing and suggestion that it be heard en banc filed in the above-entitled cause on April 26, 1972 by plaintiffs-appellants, no judge in regular active service having requested a vote thereon, nor any judge having voted to grant the suggestion, and the panel having voted to deny a rehearing,

IT IS ORDERED that the petition for a rehearing in the above entitled cause be and the same is hereby denied.

Findings Adopted by the District Court

Judge Austin's Letter, September 23, 1970

United States District Court
For the Northern
District of Illinois
Chicago 60604

Chambers of
Richard B. Austin

September 23, 1970

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IN RE: SHELCO, INC. vs. BOYLE-MIDWAY, et al., Nos. 67 C 1393, 67 C2190

Gentlemen:

The court has reviewed the evidence, exhibits and briefs of the parties in the above cause and finds the issues for the defendants.

The findings of fact and conclusions of law tendered by the defendants accord with those which this court would have entered except that finding of fact #179 has been deleted and conclusion of law #18 has been amended to delete therefrom the words "should be", and as so changed said findings and conclusions are adopted as the Findings of Fact and Conclusions of Law of the court.

These Findings and Conclusions have this day been signed and entered. Counsel are requested to bring an appropriate Judgment Order within 20 days from date hereof.

Sincerely,

Richard B. Austin

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COPY PRINTED CLOSE TO EDGE

Findings Adopted by the District Court

[Entered September 23, 1970]

THE PARTIES, ISSUES, AND JURISDICTION

1. Plaintiff, Shelco, Inc., is a Massachusetts Corporation having its principal place of business at Wellesley Hills, Massachusetts. Plaintiff, The Shelco Company, is a Delaware corporation having its principal place of business at Wellesley Hills, Massachusetts. The Shelco Company is a wholly-owned subsidiary of The Clorox Company, an Ohio corporation authorized to do business in Illinois. (Pl. Pretrial Brief 7)

2. On December 4, 1969, The Shelco Company acquired substantially all of the assets of Shelco, Inc., including the right, title, and interest in U. S. Patent No. 3,335,092 (the patent in suit). Shelco, Inc. was the owner of the patent in suit prior to December 4, 1969. (Pl. Pretrial Brief p. 7) Shelco, Inc. was the sole plaintiff until January 14, 1970, when, on plaintiff's motion, The Shelco Company was joined as a party plaintiff on condition that it be bound by all proceedings in the case with the same force and effect as they are applicable to Shelco, Inc. (9-10). The Shelco Company also agreed in open court to assume any liabilities of Shelco, Inc. arising from this case (18-19). Hereinafter, unless otherwise indicated, the plaintiffs will be referred to as "Shelco."

3. Shelco, Inc. became the owner of the patent in suit by way of an assignment from Winfield Brooks Company, Inc., the assignee of the patentee, Kenneth E. Perry (Pl. Pretrial Brief 7). There is a continuing relationship between Shelco, Winfield Brooks, and Mr. Perry, as follows: Mr. Perry is the President of and owns the controlling interest in Winfield Brooks, and he is a Director of and, through Winfield Brooks, owns approximately 35% of Shelco, Inc. (811, 1082, 1127-29). Winfield Brooks makes and Shelco sells the oven cleaner ("Jifoam") which is the commercial embodiment of the Example of the patent in

suit. (1087, 1092, 1302; Stipulated Statement of Uncontested Facts p. 3).

4. Defendant, The Dow Chemical Company, (hereafter "Dow") is a Delaware corporation having a regular and established place of business in Chicago, Illinois. Defendant, Harry G. Schierholz & Co. (hereafter "Schierholz"), is an Illinois corporation having a regular and established place of business in Chicago, Illinois.

5. On August 10, 1967, Shelco, Inc. filed a complaint (C. A. No. 67 C 1393) charging Dow and Schierholz with infringement of U. S. Patent 3,335,092, entitled "Oven Cleaner and Method of Using the Same." Dow is the manufacturer of an oven cleaner ("Dow All New Oven Cleaner") charged to infringe this patent and Schierholz is Dow's distributor for this oven cleaner in the Chicago area.

6. On December 21, 1967, Shelco, Inc. filed a complaint (C. A. No. 67 C 2190) charging defendants Boyle-Midway, Inc. (hereafter "Boyle-Midway") and American Home Products Corporation (hereafter "AHP") with infringment of the same patent by manufacture and sale of Boyle-Midway's "Easy-Off" oven cleaner.

7. All defendants have filed counterclaims seeking a declaration of invalidity of the patent and attorneys' fees and Dow has further counterclaimed for treble damages under the antitrust laws.

8. This Court has jurisdiction of the parties and subject matter. Venue in this District is proper.

9. By order of October 1, 1969, C. A. Nos. 67 C 1393 and 67 C 2190 were consolidated for trial on the sole issue of validity of the patent in suit.

THE PATENT IN SUIT

10. On December 4, 1963, Kenneth E. Perry filed his original application for the patent in suit (DX 74). A first

revised application was filed July 6, 1964 (DX 75) and a second revised application was filed on August 26, 1965 (DX 76). The August 26, 1965 application matured into U. S. Patent 3,335,092 on August 8, 1967 (DX 77).

11. The patent relates to a composition for cleaning ovens, grills and similar surfaces and to a method for applying the composition. Dow and Schierholz are charged with infringement of composition and method claims, specifically Claims 1-6, 14, 16-19, 26, and 28-32. American Home Products and Boyle-Midway are charged with infringement of the same claims with the exception of 31 and 32. (Stipulated Statement of Uncontested Facts, p. 3; Pl. Pretrial Brief, p. 10).

12. The sole composition example of the patent in suit reads:

"EXAMPLE

Ingredient:	Proportion, per cent
NaOH (in the form of a 50% solution or 50° Baume)	[1]3.0
Ammonium salt of the sulfate ester of an alkylphenoxy polyoxy ethylene ethanol, sold under the trade name Alipal CO-436 by Antara Chem. Co. (surfactant)	1.0
Sulfonate surfactant sold under the trade name Benax 2A1 by Dow Chemical Co.	0.1
Propylene glycol	20.0
Furfuryl alcohol	1.4
Tetrahydrofurfuryl alcohol	0.7
Water (including water of NaOH solution)	73.8

[1] Exclusive of water in solution."

Mr. Perry, the inventor, summarized his invention as being:

> "the development of the best oven cleaner on the market that could be—that was basically a safe aqueous caustic oven cleaner applied to a hot oven through an aerosol can, gaining the benefits both of the ingredients and the application through an aerosol can, . . ." (1249)

13. The composition claims, broadly, call for a liquid oven cleaner for application as a spray to a hot oven, consisting essentially of water in an amount of over 50% by weight of the composition, and an alkali metal hydroxide in an amount of from 1-10% of the composition packaged in an aerosol container with a propellant (e.g. Claim 16). Both sodium hydroxide and potassium hydroxide are classified as alkali metal hydroxides (51, 1254-55).

14. Certain narrower claims specify that the alkali metal hydroxide be sodium hydroxide in an amount of 3% and further call for the presence of any amount of a humectant and any amount of a surfactant (e.g. Claim 28).

15. A humectant, in the context of this patent, is a substance used to retard evaporation of the composition. (DX 77, Col. 3, lines 41-44; 59; 3358; 3385-86). No specific amount of humectant is specified by any of the claims. The specification says the amount of humectant may be as little as 1% or may be omitted altogether. (DX 77, Col. 3, lines 53-56, 70-73). The humectant can be either a glycerol (a polyhydric alcohol known commercially as glycerine), a glycol (an alcohol having two hydroxyl groups), or any alcohol having more than two hydroxyl groups. (DX 77, Col. 3, lines 41-44; 60-65; 1623-24; DX 624; 3351-55).

16. The term "surfactant" is a shorthand term for a surface active agent (39). In the context of this patent, a

surfactant is a wetting agent (40; 2373). The surfactant can be one (or more) selected from the groups classified as anionic (carrying a negative charge in solution), cationic (carrying a positive charge in solution), or nonionic (carrying a neutral charge in solution) (65-66; DX 77, Col. 3, lines 62-70). No specific amount of surfactant is called for in any of the claims, nor in the specification. (DX 77, Col. 4, lines 3-6).

17. The method claimed by the patent is to spray the composition on a hot oven, leave the composition on the hot oven for an interval of time, and then remove the composition (e.g. Claim 1). Some claims state that the oven should be at a temperature of at least 140°F. (e.g. Claim 6).

18. While both the composition and method claims refer to the composition as being sprayed from an "aerosol container" by a "propellant," the patent specification states that the "same results were achieved by spraying the cleaner . . . on a hot oven with a conventional pressure atomizer" (DX 77, Col. 3, lines 38-40).

19. In the patent in suit, the reduced caustic (3%) is said to have the advantage of making the cleaner safer, less corrosive, and easier to store (Col. 1, lines 48-52; Col. 2, lines 3-5). The spray is said to make the cleaner less messy to apply and easy to remove (Col. 1, lines 44-48; Col. 2, lines 14-17). The application to a hot oven is said to be more convenient in that the oven may be cleaned without waiting for it to cool (Col. 2, lines 63-67), and the elevated temperature speeds the reaction to the point where the cleaning can be done in 5 to 20 minutes, a fraction of the time required by paste cleaners (Col. 2, lines 50-56; 18-26). It is to be noted that while the patentee says that heat is essential to his invention (1318; 1325-26) Shelco maintains, under oath, that the composition is covered by the patent claims whether used on a hot or cold surface (Pl.'s Ans. to Interrog. 79.10, 805).

Findings Adopted by the District Court

20. In written arguments and sworn affidavits submitted to the Patent Office during the pendency of Perry's third application, Perry made the following statements:

> "This demonstrates the deep-seated opinion of those skilled in this art prior to applicant's invention that (1) caustic oven cleaners should, under no circumstances, be applied to a *hot* oven and (2) the aerosol packaging of aqueous solutions of sodium hydroxide for oven cleaning was too hazardous to be acceptable, two misconceptions which applicant proved to be untrue." (DX 76, p. 89)
>
> • • •
>
> "However, recently, after JIFOAM [Perry's oven cleaner] disproved the prevailing belief of those skilled in the art that (1) aerosol packaging of aqueous solutions of sodium hydroxide is too hazardous and (2) *applying a caustic solution to a hot oven is too hazardous*, . . . " (emphasis added) (DX 76, p. 91)
>
> • • •
>
> "Thus, after applicant had disproved the prevailing beliefs that aerosol packaging of aqueous solutions of sodium hydroxide for oven cleaners was too hazardous to be practical and that application of alkaline oven cleaners to a hot oven was also too hazardous, ..." (DX 76, p. 94)
>
> • • •
>
> "In achieving this commercial success, it was necessary to overcome the prejudices of those skilled in this art, as evidenced by the Consumer Reports, against aerosol packaging of aqueous sodium hydroxide oven cleaners and against application of alkaline oven cleaners to a hot oven." (DX 76, p. 96)
>
> • • •
>
> "So far as I know, I am the first to have thought of aerosol packaging a sodium hydroxide-water or sodium hydroxide-water-glycol oven cleaner and am the

first to have thought of applying such aerosol oven cleaner to a hot oven at a time when others in this field were of the opinion that it would be dangerous and unsatisfactory to do either." (DX 76, p. 94)

21. Although Perry's testimony, continuing his approach before the Patent Office, contends for a very broad scope of invention, the advance over the prior art now asserted by Shelco is that Mr. Perry was the first to teach that an *aqueous solution* oven cleaner with *reduced caustic* (less than 10% free alkali metal hydroxide) and a *large percentage* (20%) of propylene glycol could be stored in aerosol *metal cans* and *sprayed* on a *hot* oven to produce a *foam* which would achieve quick, effective, and safe cleaning. (21-32; Pl. Pretrial Brief 3-5, 16-24). This is considerably narrower than the position urged on the Patent Office and the patent's broad assertion that the advance was over prior art oven cleaners which were applied as thick, messy pastes having a high (10%) free alkali metal hydroxide content and which were all applied to cold ovens (Col. 1, lines 20-43; Col. 2, lines 3-17). It is also considerably narrower than the claim language which, for example, does not speak of metal aerosol cans, nor foam, nor any proportion of humectant or propylene glycol, nor, in many cases, even a reduced caustic.

22. Without a surfactant, an aqueous caustic in an aerosol container with a propellant will not foam or adhere to a hot oven wall. (Lover 2165-2166). Most of the claims of the Perry patent do not call for the use of a surfactant (the foaming agent). (Claims 1, 3, 4, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18, 20, 21, 22, 24, 25, 26, 29, and 30). Mr. Perry, the inventor, echoing his Patent Office arguments, testified:

> "Q. Then a 3 percent aqueous caustic, with an aerosol can, applied to a hot oven is within your invention?
>
> * * *

"A. In the broad claims, it would be so, sir." (Perry 1341).

Hence the term "spraying" found in the method claims is not limited to the spraying of a foam but was intended to cover any form of spray. That this was the intention of the inventor is shown by the statement in the patent that "The same results were achieved by spraying the cleaner of the example on a hot oven with a conventional pressure atomizer." (Col. 3, lines 38-40). There are frequent references in the patent to "spray *or* foam" (*e.g.*, Col. 5, line 59) which only confirm the broad intended meaning of the term "spraying" found in the method claims.

23. From the above findings, it is apparent that in its examination of the prior art the court must look primarily for art teaching the use of freely flowing aqueous solutions of free alkali metal hydroxides in amounts not more than 10% by weight that were suitable for spraying on a hot oven. In view of Finding 21 and 22, the vehicle by which the spray is dispensed is not critical; nor is the form of the spray (that is, whether it foams). With respect to the narrow claims, the Court, in addition, must look for the presence of a surfactant and a humectant, though the amount of either is immaterial. With respect to the humectant, the Court must further look for the use of glycols, glycerols or other polyhydric alcohols as the humectant and, with respect to two claims (31, 32) it must look for the use of propylene glycol as the specific humectant, though in no particular percentage. In view of the absence of any teaching in the patent that a high percentage (such as 20%) of propylene glycol functions as a particular safening agent, or that propylene glycol serves this function better than any other humectant specified in the patent, the prior art, contrary to Shelco's contention, need not be examined for this teaching. The prosecution history of the Perry patent also casts light on the scope of inquiry into the prior art necessary for resolving the issues herein.

Findings Adopted by the District Court

PERRY'S ORIGINAL APPLICATION; HIS TWO REVISED APPLICATIONS; AND HIS CANADIAN AND GREAT BRITAIN APPLICATIONS

24. While the scope of the prior art to be looked for has been defined by Finding 23, the Court must also determine the effective filing date for the claims in issue; that is, the cut-off date for "prior" art. The prosecution history of the Perry patent casts light on this factor.

25. On June 4, 1963, Perry made a disclosure of his oven cleaner formula to his patent attorney. (DX 63) The disclosure stated:

> "For the oven cleaner, the ratio of tetrahydrofurfuryl alcohol and furfuryl alcohol is essential. It can be varied somewhat but *neither can be eliminated or replaced with like alcohols.*" (Emphasis added).

26. On December 4, 1963 Perry's patent attorney filed Perry's first application for patent (DX 74, p. 1-15), serial 328,114. The first seven claims of the ten claims of the original application, as filed (DX 74, p. 13, 14) were limited to an oven cleaner composition which included a catalyst designated as furfuryl alcohol and tetrahydrofurfuryl alcohol. The remaining three claims were limited to a method of using the oven cleaner composition having the catalyst defined in the first seven claims. In other words, each claim of Perry's original application contained the limitation to furfuryl alcohol and tetrahydrofurfuryl alcohol. The claims were appropriately and necessarily drawn in this limited way in view of Perry's communication to his attorney disclosing his invention.

27. Perry's disclosure further specified his invention and taught the necessity of the furfuryl alcohols in his oven cleaner:

> "The present invention is *based* on the surprising discovery that a mixture of furfuryl alcohol and

tetrahydrofurfuryl alcohol *catalyzes and enhances the cleaning action of the sodium hydroxide,* especially at elevated temperatures, *to such a great extent that the amount required can be reduced to less than* ⅓ and such reduced amount has a markedly greater and faster cleaning power." (DX 74, p. 3, lines 21-27) (emphasis added)

28. On April 20, 1964, more than one year after the sale to Vaughn Electric, Kenneth E. Perry filed an amendment to his original application, Serial No. 328,114 adding a new Claim 11 which was not restricted to an oven cleaner composition containing the *catalyst.* (DX 74, p. 16) Claim 11 reads:

". . . A method of cleaning ovens comprising spraying on the oven while it is hot, a composition in the form of a foam and containing as an essential ingredient, an alkali metal hydroxide, leaving said composition on the hot oven for an interval of time and wiping the composition off said oven." (DX 74, p. 16)

This claim was rejected by the Patent Office on April 2, 1965 "as failing to point out the invention in the methods claimed, since the *necessary* furfuryl-tetrahydrofurfuryl alcoholic mixture has not been set forth". (DX 74, p. 19, paragraph 7). (Emphasis added) Perry abandoned this original application without response. (DX 74, p. 21).

28a. Perry filed a first revised application (DX 75) on July 6, 1964 in order to get the broadened disclosure of new Claim 11 under oath. (DX 75, p. 15). The Patent Office, in the first revised application, believed that claim 11 was still faulty:

"7. Claims 11-13 are rejected as indefinite and as failing to point out the alleged invention since the

necessary hydrofurfuryl-tetrahydrofurfuryl alcoholic mixture has not been set forth." (DX 75, p. 19, March 2, 1965).

In response to this rejection, Perry directly misrepresented a critical fact:

> "Original claim 11 has been incorporated into the specification. *Such original claim was a part of the original disclosure.*" (DX 75, p. 33)

29. In subsequent arguments in Perry's first and second revised applications before the United States Patent Office and in companion cases before the Canadian and Great Britain Patent Offices, Mr. Perry argued that the "broad concept" of his invention—not limited to the use of the catalyst—was first disclosed on the date be filed Claim 11, April 20, 1964, which was more than one year after the sale of his oven cleaner. For example, on August 23, 1966 the Canadian Patent Office rejected all claims in the corresponding Canadian application (originally identical to the U. S. application, as amended by the addition of Claim 11), which were not limited to the use of the furfuryl-tetrahydrofurfuryl alcohol catalyst:

> "According to the disclosure page 3, lines 21 to 27, the invention of the present application is *based on* the use of a mixture of furfuryl and tetrahydrofurfuryl alcohols, which *catalyzes* and enhances the cleaning action of the sodium hydroxide at elevated temperatures. (Emphasis added)
> Therefore claims 1, 12, and 13 are rejected as not being supported by the disclosure and must be cancelled." (DX 608, p. 417)

30. Perry argued that the disclosure of claim 11 (which was filed with the original Canadian Application but was not included in the U. S. application until the amendment of April 20, 1964—more than one year after a sale of Perry's invention) provided disclosural support for the non-catalyst claims:

Findings Adopted by the District Court

"This *broad concept* of applicant's invention is clearly set forth in *claim 11* as originally filed with the application, with no reference being made therein to the presence of a catalyst in the cleaning composition. This broad concept of the invention and applicant's intent to claim the matter broadly is all the more clearly realized upon reference to originally filed claim 12, [not in original U. S. application, until amendment of April 20, 1964], which is dependent upon *claim 11* but further recites the presence of the catalyst in the broad cleaning composition of *claim 11*. This is a crystal clear teaching that the invention is not limited to the presence of the catalyst. It is also clearly stated on page 11 of the original disclosure that the invention *is not limited to the description of the specification* but only to the compositions and methods *claimed* in the *claims*, among which is *claim 11*. Thus, when the original disclosure is viewed as a whole, which it must be, it discloses that the invention in its broadest aspect does not require a catalyst and that use of such catalyst is a narrower aspect of the invention as is the use of the humectant." (DX 608, pp. 412, 413) (Material in brackets added) (Emphasis added)

* * *

"Thus the catalyst merely enhances and improves the overall broad inventive concept. In order to distinguish between the broad aspect (as per original claim 11) and the narrower aspect (the use of catalyst and/or humectant) of the inventive concept this paragraph [of the Canadian disclosure] has been amended to refer to such narrower aspect as a part of the invention." (Emphasis added) (DX 608, pp. 413, 414) (Material in brackets added)

31. The earliest effective filing date to which Perry is entitled for the broad non-furfuryl alcohol limited claims (all of the claims here in issue) is not December 4, 1963, the

date of his first application, but April 20, 1964, the date on which claim 11 was added to the first application.[1]

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[1] On June 25, 1969, this Court denied a Motion For Summary Judgment under 35 U. S. C. §102 (b) based on the sale of 1200 cans of Perry's oven cleaner to Vaughn Electric Company (DX 58; 821; DX 82) more than one year prior to the April 20, 1964 date. This Court was of the view, at that time, that Perry was entitled to the December 4, 1963 date for all claims in his patent. Evidence subsequently received during the trial of this case shows that the April 20, 1964 date is the correct one.

The Plaintiff, in response to the Motion For Summary Judgment filed by AHP and Boyle-Midway, quoted the sworn testimony of Mr. Perry taken during his pretrial deposition:

> "Q. Did you understand at the time you signed this oath [accompanying the original Perry application filed December 4, 1963] that you had to have a furfuryl alcohol in your material for your invention?
>
> "A. I don't believe I understood it had to be that. It was preferred." (Pl's. brief, p. 12.)

On Motion For Summary Judgment, Mr. Perry's sworn testimony was entitled to full credit as that of one skilled in the art. As of the time of the Motion For Summary Judgment, Mr. Perry had denied under oath that he had made a written disclosure of his invention to his patent attorney. (1320-1322) Subsequently, under Order of Court, Plaintiff produced Mr. Perry's invention disclosure to his attorney, which reads:

> "For the oven cleaner, the ratio of tetrahydrofurfuryl alcohol and furfuryl alcohol is essential. It can be varied somewhat but neither can be eliminated or replaced with like alcohols." (DX 63, 525).

Mr. Perry's admissions in the Canadian and Great Britain applications as to the significance of claim 11 are also highly revealing and consistent with his disclosure to his patent attorney. In *Devex Corporation* v. *Houdaille Industries, Inc.*, 382 F. 2d 17 (7th Cir. 1967), the Court stated:

> "The fact that he made an admission to the Canadian Patent Office as to the date of his patent disclosure contrary to that which he previously made to this Court, in which he now persists, relates to his credibility and presents a matter for consideration by the trier of the facts." (At p. 25)

Finding 30 is consistent with the Seventh Circuit's recent decision in *General Foods Corporation* v. *Perk Foods Co.*, 419 F. 2d 944 (7th Cir. 1969); 164 U. S. P. Q. 1. The matter is further discussed under the heading "Fraud".

Findings Adopted by the District Court

PRIOR ART PATENTS

32. The patent in suit relates broadly to the art of cleaning compositions and, specifically to compositions for cleaning cooking residue from ovens. Prior art cleaning compositions have traditionally utilized an alkali as their active (cleaning) ingredient. (40-41) Alkalis are basic substances which are characterized by the predominance of hydroxyl ions (OH^-) when dissolved in water, as opposed to acidic substances which are characterized by the predominance of hydrogen ions (H^+). The presence of these ions can be detected and expressed on a scale known as the pH scale wherein "7" indicates neutrality; "7" to "14", increasing alkalinity; and "7" to "0", increasing acidity. (47-48) The most commonly used alkali is sodium hydroxide (NaOH), but other alkalis, such as potassium hydroxide (KOH) or sodium metasilicate, (alone or mixed physically with 40% NaOH and sold as sodium orthosilicate) were also commonly used as the active ingredient in cleaning formulations, including oven cleaners. (40-41; 50-52; 55).

33. The cleaning reaction, generally speaking, is the reaction of the base alkali (frequently referred to as a "caustic" because of its high pH and consequent corroding effect on skin, eyes, and metals) with the fatty acids and other compositions which comprise the baked-on residue. (DX 72, Tab. 1, Col. 2, lines 9-15) This reaction produces an alkali metal salt commonly known as soap. (1731, 1746-1747) This soap-making reaction is described by the term, "saponification." (DX 72, Tab. 1, Col. 2, lines 9-15). The soap does not stick to the oven surface and can be wiped off, leaving a clean surface. (DX 77, Col. 3, lines 34-36).

34. In addition to the alkali cleaning ingredient, it has also been common in the prior art to add certain other ingredients to oven cleaners, such as humectants, surfactants, ammonia, and others, to enhance, in one way or another, the alkali cleaning action. (DX 2; 358-60; DX 3; DX 556; PX 32; DX 72).

Findings Adopted by the District Court

35. Perlman patents 3,031,408 and 3,031,409, which issued April 24, 1962 are prior art references which teach the aerosol packaging of a reduced caustic oven cleaner (preferably 2-3% sodium or potassium hydroxide). (DX 72, Tabs. 6 & 7). This cleaner also contained compatible surfactants and glycols which functioned as humectants. (1226-31; DX 77, Col. 2, lines 32-41) The '409 Perlman patent also taught that the spraying of the cleaner as a foam can be accomplished by, but is not inherent in, aerosol packaging. Of the 32 examples disclosed in the patent, 16 produced a non-foaming spray. (DX 85, pp. 14-16) But, Perlman says, the same "exceptionally good cleansing action" may be obtained from the spray as from the foam. (DX 85, p. 12) A similar result was suggested by the patent in suit wherein it is said the same results were obtained from a "conventional pressure atomizer" as from a foam-producing aerosol package containing a composition having a surfactant. (DX 77, Col. 3, lines 38-40).

36. The Perlman oven cleaning compositions were not water-based, but were to be applied to an oven surface which had been wetted with water prior to the application of the cleaner (DX 72, Tab. 6, Col. 4, lines 18-21, Tab. 7, Col. 3, lines 54, 71-73). The patents *per se* do not disclose the use of the compositions on a hot oven, but Dow's expert, Dr. Colburn, testified that they are chemically suitable for application to a hot oven, and the file history of the '409 Perlman patent, page 30, states that the "glycol or glycol ether is utilized to raise the flash point of the mixture and insure safe use of the cleansing composition upon heated oven surfaces" (99, DX 85; DX 86).[2] It is thus apparent that the Perlman cleaners were suitable for use on a hot oven

[2] Mr. Perry's attorney was aware of the "heated oven surface" language in the Perlman file wrapper (DX 86) although there is no evidence that Perry, or his attorney, called this fact to the attention of the Patent Office when they were attempting to distinguish over Perlman.

and were intended to be so used if the housewife desired. In fact, the file history of the patent in suit disclosed (DX 75, pp. 34-45) that Mr. Perry applied two of the Perlman compositions and the commercial embodiment of the Perlman patents (an oven cleaner known as "Hep") on a heated oven surface without difficulty and obtained better results on a hot surface than a cold surface.

37. Boucher patent 3,079,284 (not considered by the Patent Office), which issued February 26, 1963, is a prior art reference which discloses an oven cleaning composition with more than 50% water and containing sodium hydroxide in an amount as low as 5%, sprayed on an oven which is then heated to increase the "efficiency of the chemical reaction of the cleaning agent with the soil to be removed, e.g., the saponification of charred fats, or the like." The use of heat is said to permit a lower concentration of sodium hydroxide thereby making the cleaner less irritating to the skin. Boucher states that the cleaning reaction produces "a soapy residue on the surface in which the remaining soil is suspended and which may be easily wiped off to leave the desired clean surface." Boucher also discloses the use of ammonia as commonly used oven cleaner additive (DX 72, Tab. 1).

38. Cleveland patent 1,370,188 (not considered by the Patent Office) which issued March 1, 1921 is a prior art reference which discloses a 5% sodium hydroxide aqueous solution which is to be sprayed hot onto a surface to remove paint. The function of the sodium hydroxide is "to enter into combination with the oil of the paint and convert it into soap which dissolves and is washed away, thus causing the pigment to become loose and in turn be washed away by the water." Thus, the cleaning reaction known as saponification is common to both oven cleaning and stripping of oil-based paints (DX 72, Tab. 3).

39. Phillips British patent 825,960 which issued December 23, 1959 discloses an oven cleaner containing an aqueous

solution of sodium hydroxide in an amount as low as 5%. This oven cleaner contained a wax-like substance that enabled the packaging of the cleaner in solid stick form. The patent also teaches the use of surfactants and the inclusion of up to 15% propylene glycol (one of the humectants of the patent in suit) (DX 72, Tab. 4).

40. Arden patent 2,992,995 which issued July 18, 1961, is a prior art reference which discloses an aqueous solution of sodium hydroxide in an amount as low as 4% for cleaning purposes. This cleaner is to be used at temperatures over 200°F. in the form of a dip (that is, the cleaner is heated rather than the object to be cleaned). This reference also discloses the use of glycerol and glycol as evaporation retarding humectants (DX 72, Tab. 5).

41. Although not a patent, a publication entitled Henley's Formulas, Processes, and Trade Secrets (1948) (DX 611, Tab. 14), a reference book for the home, carries the following instructions:

> "To Clean a Gas Stove—An easy method of removing grease spots consists in immersing the separable parts for several hours in a warm lye, [sodium hydroxide] heated in about 70°C. (158°F.), said lye to be made of nine parts of caustic soda and 180 parts of water. [5% sodium hydroxide and 95% water] These pieces, together with the fixed parts of the stove, may be well brushed with this lye and afterwards rinsed in clean, warm water. The grease will be dissolved, and the stove restored almost to its original state." (Material in brackets added)

42. The prior art patents and the Henley publication described above illustrate that it was common practice to use alkalis such as sodium hydroxide as the cleaning agents for oven cleaning compositions; that aqueous solutions of sodium hydroxide in the range of 4 to 5% were common

in oven cleaners; that the use of heat, either applied to the cleaning composition or the object to be cleaned was known to be desirable in speeding the saponification and other chemical cleaning reactions; that surfactants are commonly added to oven cleaning compositions; that humectants are commonly added to oven cleaning compositions; that glycerols and glycols, including propylene glycol are common, interchangeably-used humectants in oven cleaners; and that oven cleaners packaged in aerosol cans were used in either foam or spray applications.

Oven Cleaner Prior Art Not Appearing in Patent Office Records

A. *John J. Sullivan's Activities*

43. In the early 1950's, a young chemist, John J. Sullivan of Boston did chemical consulting work for a Connecticut concern, the Wolcott Company (1542). The President of Wolcott, a Mr. Frank Wolcott, had been the original United States developer and merchandiser of the paste-type oven cleaner "Easy Off" which was later acquired by Defendant Boyle-Midway. After selling his paste oven cleaner formulation and business to Boyle-Midway, Mr. Wolcott developed an aerosol valve stem brush type applicator which would allow the safe, controlled application of a detergent foam to an oven surface (1542, 1552). (See DX 533.)

44. Mr. Sullivan's original formulation work with water-based caustic oven cleaners parallels in time his working association, first with Mr. Wolcott's brush applicator, and subsequently with a sponge-type applicator (DX 535) promoted by Mr. Frank Hoar of Essex Laboratories and a Mr. Frank Sugrue, President of Shield Chemical Company until 1958[3] (1566).

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[3] This is the same Shield Chemical Company that first aerosol packaged Perry's patented composition (1530-32).

45. The first caustic cleaner which Sullivan experimentally packaged in an aerosol container (in 1954) was a whitewall tire cleaner containing 15 to 16 per cent by weight glycol, 3½ per cent potassium hydroxide, 4 or 5 per cent silicate, ½ per cent surfactant, and the remainder water (1548, 1585, DX 543). This heavy-duty detergent product was not put on the market in aerosol form because aerosol can and valve technology was not at that time sufficiently advanced to make the product attractive from either a technical or price standpoint (1549).

46. By late 1956 and early 1957, Sullivan's efforts were again directed toward aerosol packaging of a heavy duty detergent system (1551, 1552). After several trial and error approaches to such a product, Sullivan developed an aerosol-loaded oven cleaner designated as OC No. 1. The components of this oven cleaner included 9½ per cent free potassium hydroxide, 2.7 per cent by weight of TWEEN 80 and 2.7 per cent by weight of SPAN 80. Tween and Span are trademarked ingredients which together functioned in the oven cleaner as a humectant-surfactant system. The remainder of the material in the aerosol package was water and the propellants Freon 114 and Freon 12 (1553-1555, DX 556).

47. In January 1957, Sullivan placed OC No. 1 (at that time designated W-6) in an aerosol can and allowed it to stand at room temperature for a period of eight months. This test showed the product to be in excellent condition with sufficient pressure still in the can to allow a foam to dispense from the container (1608, 1609, DX 555).

48. The amount of KOH flake (caustic potash) by weight in OC No. 1 is listed in Sullivan's lab books as 11.3 per cent. The evidence shows that commercial grade caustic potash is from 90 to 92 per cent pure potassium hydroxide (1618).

Findings Adopted by the District Court

49. Thus, Sullivan added approximately 10.1 per cent by weight of pure potassium hydroxide to his OC-1 oven cleaner. The evidence also shows that when the potassium hydroxide is brought into mixture with the water and the Span 80 and Tween 80, a saponification reaction occurs between the Span 80 and Tween 80 and the potassium hydroxide. After the reaction, which takes only 15 or 20 minutes, there is theoretically an amount of free potassium hydroxide in the OC-1 solution of approximately 9.6 per cent (1618, 1619).

50. This theoretical figure of a percentage of potassium hydroxide less than 10 per cent was supported by independent experiment of Dr. Robert M. Lazo, whose expertise in the chemical field was thoroughly established (3345, 3346). Dr. Lazo prepared a 600 gram sample of OC No. 1 which contained 11.3 per cent commercial grade caustic potash, 2.7 per cent Span 80 and 2.7 per cent Tween 80, with the remainder of the solution being water. By actual measurement, the OC-1 formula was determined to contain free potassium hydroxide in the amount of 9.83 per cent by weight (3348).

51. Dr. Lazo described the Span 80—Tween 80 surfactant-humectant system as containing polyhydric alcohols, which means alcohols containing three or more hydroxyl groups (3353, 3369). Span 80 is a non-water soluble Sorbitan Mono-oleate. Tween 80 is a water soluble Sorbitan Polyoxyethylene Mono-oleate (3362, 3368).

52. By January 9, 1959, Sullivan had shelf-life tested his OC No. 1 formula in drawn aerosol cans for two years. He found no leakers whatsoever in the drawn or two-piece can (with no side seam) (1656-1658, DX 568).

53. Sullivan's OC-1 oven cleaner was on sale from 1957 up to and including the time Mr. Perry made his alleged invention. Sullivan loaded the OC-1 formulation in sample

aerosol cans for Essex for subsequent submission to potential customers, including Bon Ami and others. During this period of time the product was submitted to customers with Risdon brand break-up buttons for spray foam application as well as with the alternate sponge applicator (1660-1661, DX 569). The OC-1 formula was suitable for application to a heated oven surface and, in fact, was so used by Dr. Terry at Bon Ami (1816-1817).

54. Essex Research, with whom Sullivan had dealt, dissolved after having financial difficulties in late 1959. After that date, Sullivan dealt directly with customers, including Bon Ami and others in his effort to sell his aerosol loaded OC No. 1 oven cleaner (1661, 1662). In Sullivan's words, his attempts to sell his oven cleaner were thwarted by cautious marketing men in the field who wanted a hand lotion that would do an oven cleaning job (1577).

55. Sullivan personally offered his OC No. 1 product to the Fuller Brush Company in 1960, 1961 and 1962 (1575). Sullivan quoted prices to various prospective customers and employed salesmen and manufacturers representatives from 1960 through 1962 in an effort to find a customer willing to market his oven cleaner (1576). Sullivan's oral testimony was well corroborated by contemporaneous documents kept by him in the regular course of business.

56. Sullivan's records show a price quotation to Armstrong Laboratories prior to Perry's invention date, for up to a half million pound shipment of the OC-1 formula for aerosol loading by Armstrong (1686, 1687, DX 576).

57. Contemporaneous with his work on the development of OC No. 1, Sullivan also formulated a whitewall tire cleaner suitable for either aerosol spray foam or mechanical pump application. The product contained one per cent by weight caustic soda, two per cent D-66, a surfactant, and five per cent diethylene glycol, a humectant, with the remainder

of the formula being water (1650-1651, DX 566). A modification of this formula was made which contained one per cent caustic soda, one per cent D-66 ten per cent diethylene glycol and the remainder water. A test of this formula showed that the foam generation and stability of the product were excellent. Fifteen gallons of this whitewall tire cleaner were sold to a Mr. Ed Devine of Crystal C and C Co. (1652, 1653, DX 567).

58. The activities of John J. Sullivan constitute the placing of an aqueous caustic surfactant humectant aerosol oven cleaner, suitable for application to a heated oven surface, in the form of a spray foam, and an aqueous caustic surfactant humectant aerosol loaded whitewall tire cleaner, on sale prior to 1962. This was before Perry's earliest work on the invention of his patent and more than one year before the filing date of his first application on December 4, 1963. There is no evidence that Sullivan, who testified at the trial, ever suppressed, abandoned, or concealed his products or his work in this area. On the contrary, there is evidence of continuous sales activity on the OC-1 oven cleaner, by and on behalf of Sullivan, during the 1957-1963 period.

B. *The Oven Cleaner of the Beam Chemical Company*

59. From 1957 to 1961 or 1962, Mr. M. A. Becker was President and Mr. Ralph Lemorande was Vice President of the Beam Chemical Company of Oconto Falls, Wisconsin, a manufacturer of various cleaning compositions. From 1961 or 1962 to 1965, Mr. Lemorande was President and Mr. Becker was Chairman of the Board of the Beam Chemical Company (267-68; 522-23).

60. Mr. Lemorande's work at Beam in the period 1957-65 included formulating compositions, packaging, shipping, sales, correspondence, and total involvement in the operations of the company (264; 571-73). Mr. Becker was involved in the distribution, financing, purchasing, and development of the company (584-85).

Findings Adopted by the District Court

61. Beginning in 1957 and continuing to the present, the Beam Chemical Company has manufactured and sold an oven cleaner, first under the name "Beam Oven and Grill Cleaner", and, by 1958, under the name of Beam "Wipe Away" (322-23; DX 24). The name "Wipe Away" was not used by Beam after about March 1962 (324-28; DX 26).

62. "Beam Oven and Grill Cleaner" was sold in glass bottles in 1957-58 and was applied in the form of a spray from a "Windex" type dispenser (298-99; DX 17; 427-29).

63. Beginning at least in 1958 and continuing throughout the period that the name was used, Beam "Wipe Away" was sold in plastic "squeeze" bottles having an air space inside the bottle and a dip tube extending through the air space into the cleaner. The cleaner was applied by squeezing the bottle, causing the cleaner to be forced up the dip tube to one orifice of the nozzle and causing the air inside the bottle to be forced out another orifice of the nozzle, thereby mixing with the cleaner and causing it to be propelled from the container in the form of an atomized spray (DX 24, 25; 327-28; 430; 533-35). The Windex-type dispenser and the plastic squeeze bottle are each examples of a conventional pressure atomizer (317-18; 1479-81; 1792-93).

64. The glass bottle oven cleaner sold by Beam had a glue-on label which contained the following directions for use:

> "1. Hold bottle upright and squeeze to spray liquid on soiled surfaces. Works faster on warm surfaces. (Non-inflammable)"
>
> "2. Wipe clean with damp cloth when soil is soft, time may be 5 to 20 minutes depending on amount of soil."
>
> "3. Can be used for soaking purposes by adding 3 oz. to each gallon of hot water." (DX 19)

65. The plastic squeeze bottles in which Beam "Wipe Away" was sold in 1958-59 carried the same directions for use as set out in Finding 64 (DX 24).

66. Prior to 1962, the Beam Chemical Company also sold its oven cleaner in gallon containers. The label for such containers in the period 1959-61 contained the following directions:

> "Apply on warm or hot surfaces—wipe clean with damp cloth".

For containers such as deep-fat fryers, the directions stated that "Wipe Away" could be used as a dip, in which case it was to be diluted, put in the container to be cleaned, and "heat to approximately 200° F." (DX 22; 313-15).

67. The label for the gallon containers also stated, however, that for use on ovens the cleaner should be applied as a spray by using a "polyethylene bottle or pressure sprayer"; that is, the purchaser could either use the squeeze bottle (DX 24) which was packed by Beam in each case of four gallons or purchase a squeeze bottle or some other type of pressure sprayer to apply the oven cleaner (DX 22; 435-36; 722-23).

68. Representative sales of Beam oven cleaner in one area (Boston) in the period 1959-60 are shown by invoices, packing slips, and bills of lading forming Defendants' Exhibits 31 A-C and 32 (344-54).

69. Advertisements for sale of Beam "Wipe Away" appeared in the November 6, 1958 edition of the Green Bay Press-Gazette and the February 23, 1958 edition of the Milwaukee Journal (DX 21, 21A; 309-12).

70. In 1958 Beam "Wipe Away" was demonstrated on live television by Mr. Lemorande, personally. During these demonstrations Mr. Lemorande would spray the oven cleaner on warm surfaces to demonstrate its cleaning ability and method of application (408-09).

Findings Adopted by the District Court

71. A printed publication in the form of a circular dated May, 1961, distributed by Cirelli Foods of Brockton, Massachusetts, one of the stores in which Beam "Wipe Away" was sold, contains the following statement concerning Beam "Wipe Away" (DX 29; 335-36):

> "Beam Wipe Away cuts burnt-on grease and cooking deposits of all kinds! It is very easy to use, just spray it on——and wipe it off with a damp cloth; it will leave no residual. Wipe Away may be used on warm surfaces (in ovens and on grills it is better to allow units to cool to approximately 200°), and will clean surfaces instantly without having to wait for them to cool down completely."

Mr. Lemorande testified that this digest accurately set forth the directions for use of Beam Wipe Away (337-38).

72. Mr. Lemorande was familiar with the composition of the oven cleaner sold by Beam in the period 1957-65 and personally did the mixing of the ingredients (351-52). On April 8, 1960, Mr. Lemorande made a typewritten copy of the formula then being used for Beam oven cleaner (DX 2; 354-55). The formula is as follows:

Per Gallon of Concentrate	
4 oz. Sodium Hydroxide	(Wgt.)
½ oz. Sodium Metasilicate	"
4 oz. Trisodium Phosphate	"
3 oz. Glycerine	(Volume)
2 oz. Triethanolamine	"
½ oz. Perma Kleer	"
3.5 oz. Triton 102 (BM2)	"
1.5 oz. Dowfax	"
2 oz. CMC Hercules	(Wgt.)
1 oz. Tamol N.	"
1.5 oz. QS Triton 15[4]	"

[4] Triton QS 15 was a handwritten addition to the formula made sometime after April 8, 1960 (360).

The "Per Gallon of Concentrate" statement in the formula means that water is added to the formula shown to make one gallon of oven cleaner (357). Glycerine is a humectant and Triton 102 and Dowfax are surfactants (358-60; 78-79). The amount of glycerine exceeds the 1% referred to by Perry as being satisfactory (76-77; DX 77, Col. 3, lines 53-56).

73. Expressed in terms of weight percent of the Beam oven cleaning composition, in the period 1957-65, the water content was in excess of 50%, and the sodium hydroxide content did not vary outside the range of between 3.5 to 5 ounces per gallon (362; PX 2; 143-44). The 4 ounces of sodium hydroxide in the formula set out in Finding 72, expressed in weight percent of the composition, is about 2.8% (72-73).

74. In the period 1957-65, the Beam oven cleaner at all times contained a humectant and a surfactant (DX 2). The humectant was usually glycerine but on occasion during 1957-62 it was propylene glycol (361). The surfactants were of the nonionic (e.g. Triton 102) and anionic (Dowfax) type (359-60; 78-79).

75. Prior to 1962, the Beam Chemical Company oven cleaner was a freely flowing liquid which contained sodium hydroxide and water in the amounts called for by each claim of the patent in suit in issue.

76. Prior to 1962, the Beam oven cleaner contained a humectant and surfactant of the types called for in those claims of the patent in suit which specify either a surfactant or a humectant.

77. Prior to 1962, the directions for applying the Beam oven cleaner were to apply it by spraying on a hot surface as called for by each method claim of the patent in suit.

78. Prior to 1962, the Beam oven cleaner was dispensed as a spray propelled by air from a conventional pressure

atomizer in the form of a plastic squeeze bottle or a plunger-actuated "Windex" type bottle (298-300; 435-36). The patent in suit calls for the spraying of the oven cleaner from an aerosol container by a propellant, and states that the cleaning results are the same whether the cleaner is sprayed on a hot oven from a conventional pressure atomizer (which uses air as the propellant) or from a conventional metal can packaged in known manner and containing a conventional volatile liquid propellant such as butane.

79. The Beam oven cleaner described in Findings 75-78 was publicly used and demonstrated, sold, and offered for sale on a large scale more than one year prior to December 4, 1963, the date of first application leading to the issuance of the patent in suit.

80. Aerosol spray-type metal cans and propellants were well known in the prior art as appears from the patent (DX 77, Col. 3, lines 29-31). No particular (much less surprising or unobvious) advantage has been shown to result from the combination of the oven cleaner and a conventional aerosol spray-type metal can, nor is any problem in making this combination shown to have existed or to have been solved by the disclosure of the patent. There is no limitation in the claims which would indicate a problem. If a problem relating to the aerosol packaging of an aqueous caustic composition is alleged to have existed in the art and to have been solved by the patentee, it must be disclosed and the best method of solving it then known to the patentee must also be disclosed pursuant to 35 U. S. C. § 112. No such disclosure appears in the patent in suit. Instead, the patent clearly and unequivocally states that the cleaner (in addition to being packaged and sprayed from a conventional pressure atomizer) was "packaged in a *known manner*" in a metal can, using a "*conventional* propellant." (emphasis added).

81. The testimony shows that the idea of packaging the Perry oven cleaner in an aerosol can was not Perry's but

was suggested by Vaughn Electric Company, a firm that had been previously supplied with the Perry oven cleaner in Beam-type squeeze bottles by Mr. Hannon, Mr. Perry's salesman (1088-89; 1158; DX 56). There is no evidence that either Mr. Perry or the aerosol packer, Shield Chemical Company anticipated or solved any problem, nor that they were suprised at the result of the aerosol packaging, nor that the combination performed other than would be the natural and expected result of the combination of conventional elements.

82. Plastic squeeze bottles and "Windex" pressure sprayers as used by Beam, were also well known in the prior art. Perry packaged his oven cleaner in Beam-type squeeze bottles as well as metal cans prior to his application for patent (1046-47; DX 54), and it appears from the patent (Col. 3, lines 29-40) that he obtained the same results from either type of spray dispenser. Perry was unable to name any structure other than the Beam-type sprayer which could have been the basis for his flat representation in the patent that the same results were obtained with a conventional pressure atomizer as with an aerosol dispenser (2543-2547).

83. The selection of means by which to apply the oven cleaner in the form of a spray is a matter of choice, as is shown by the patent specification (see Finding 22) and the claims are broad enough to cover both metal cans and squeeze bottles. The combination of the oven cleaner and either a conventional metal can or squeeze bottle does not constitute invention, nor was the combination an invention of Perry (even if it were inventive).

C. *The Work of Seljan*

84. John W. Seljan was a man whose background included actual experience cleaning grills and ovens. His first experience with chemical formulating came when he was employed by the Cee-Bee Chemical Company in Cali-

fornia in the 1940's (836, 838). Among other products, the Cee-Bee Chemical Company made industrial cleaners for metal plating industries and the aircraft industry (840).

85. One such formulation included 5 per cent potassium hydroxide by weight, 1/10 of 1 per cent sodium chromate employed as a rust inhibitor, and ½ of 1 per cent Triton X-100 employed as a wetting agent (surfactant). The remainder of the solution was water (841-843). This formula was used with a steam cleaning spray apparatus with the formula being sprayed from one nozzle and the steam which was used to heat and rinse the metal, sprayed from an adjacent nozzle alternately with the formula (843, DX 516). The system was used to clean an oily preservative from the metal (849).

86. Seljan left Cee-Bee Chemical in 1952 and started his own chemical business called Coast-to-Coast Chemical Co., located in Gardena, California. From California, Seljan moved his business to Dallas in 1955 and to Green Bay, Wisconsin in 1957 (854). While in Green Bay, Seljan became aware of the Beam Chemical Co. and its oven cleaner product (855, 56). Seljan immediately formulated an oven and grill cleaner to compete with Beam which he sold in gallon jugs accompanied by a Windex-type spray bottle which could be filled from the gallon jug (857, 58; DX 517, 517-A). The formula used for this oven and grill cleaner was a mixture of 1 lb. sodium hydroxide in a gallon of water with approximately ½ per cent Triton X-100, a surfactant, and 2 per cent ethylene glycol, a water evaporation retardant (858, 859).

87. When Seljan formulated his oven cleaner in Green Bay, he was aware of the fact that Beam Wipe-Away was sold for application to warm ovens and grills (863). He selected a water evaporation retardant (ethylene glycol) for his formula to prevent its evaporation from the oven surface (861). His knowledge of the humectant properties

of ethylene glycol stemmed from his knowledge that it was commonly used in automobile radiators to prevent evaporation of the hot water (861). Seljan sold his oven cleaner from July of 1957 through the first part of 1958. In all, he sold about 400 gallons of the formulation (861, 862).

88. In November of 1958, Seljan returned to California where he manufactured a product called Dip-Away for oven cleaning. Seljan mixed his Dip-Away formula in a small metal drum in his backyard. This formula contained from 15 to 18 per cent potassium hydroxide,[5] a dye to give color to the formulation, and ethylene glycol to prevent evaporation of the solution from the surface to be cleaned (864-866). The ethylene glycol used was between 1 and 3 per cent by weight of the solution (875). He supplied customers with directions for use of his oven cleaner which included instructions to spray the aqueous caustic solution onto a heated oven surface. He did this in response to his customers' employees' experience that spraying was a convenient method of application (876).

89. During 1959, Seljan personally went to kitchens and restaurants to demonstrate the use of and sell his product (875, 876). From August 17 through August 20, 1962, Seljan demonstrated his product at the National Restaurant Association Convention in San Francisco attended by some 35,000 people (880, 898; DX 501). During the demonstration, Seljan used an electric heating element to heat the encrusted stainless steel pans which were to be cleaned. The pans were heated to approximately 200°, the Dip-Away

[5] The patent sets an upper limit of 10 per cent for the alkali metal hydroxide. The stated purpose is to avoid stringent labeling requirements. Mr. Seljan testified that he "jacked it up to make it stronger" (928), and improved both the speed and performance of his product (928). Mr. Seljan seemed to adapt quite readily to the labeling requirements raising serious questions as to the validity of the 10 per cent, or any other per cent, limitation as an inventive feature.

was sprayed on the pans and the grease and dirt were observed to dissolve in three to five seconds (885, DX 501-A). During the demonstration in San Francisco in August of 1962, approximately 2,000 advertising brochures setting forth the spray-heated surface method of application were distributed to various people there (898, DX 502).

90. Seljan marketed his product Dip-Away (later changed to Dip-R-Spray) in gallon containers (DX 506, 876, 877). The gallon containers were packaged four one-gallon containers to a case and each case included a plastic spray bottle (877). Prior to the August show in 1962, Seljan had sold between 1500 and 2000 such cases of Dip-Away. In each of these cases a label instructed the consumer to use the product on a warm or hot oven (910). The small container into which the contents could be poured (DX 517) included a Windex finger action spray member (911). Seljan was still successfully marketing his product at the time of his deposition on January 8, 1969 (923).

91. After Seljan had been exposed to the needs of the industry for an aqueous caustic oven cleaning product and after he had been exposed to Beam's answer to these needs in Wisconsin, he was, within a short time, able to manufacture a product with similar components which worked in a similar fashion. The fact that Mr. Seljan had no formal education in chemistry but was immediately able to develop and market a successful aqueous caustic, surfactant, humectant, oven cleaner for spray application to a heated oven surface is strong evidence of lack of invention in the Perry product.

D. *The Bissell Oven Cleaner*

92. In November, 1962, Capitol Packaging Co. of Melrose Park, Illinois made and sold to Bissell, Inc. of Grand Rapids, Michigan, an aqueous caustic oven cleaner which was packaged in a conventional aerosol spray-type metal can with a conventional propellant (DX 3, 5, 6, 7, 8).

Findings Adopted by the District Court

93. The formula for the oven cleaner referred to in Finding 92 was developed at and by Capitol Packaging Co., (170-72) and in the time period from the first sale in November, 1962 until 1966 the formula, expressed in weight percentage of the composition, was as follows (DX 3; 83-85):

Sodium orthosilicate	7%
Sole-terge 325	7%
TS-2S	2%
Safrol	0.075%
Water	83.925%

94. Sodium orthosilicate is a physical mixture (as opposed to a chemical union) of soduim hydroxide (NaOH) and sodium metasilicate (Na_2SiO_3) in the respective weight proportions of 40-60 (55-57; 129-130). This fact is supported by testimony, calculations and tests performed by Dow's chemical expert, Dr. Colburn, and by a recognized chemical text, *The Condensed Chemical Dictionary* (Sixth Edition) (130-31; DX 93). Based on both his formula calculations and his analysis of an aqueous solution of the product, Colburn testified that a 7% aqueous solution of sodium orthosilicate contains 2.8% free sodium hydroxide (58-59).

95. Dr. Colburn further testified that both TS-2S and Solterge 325 are surfactants, the latter also containing about one-quarter free diethanolamine which is a humectant containing two hydroxyl groups and therefore a glycol (84; DX 91; 2497-98; 3356-57). Safrol is a perfume (84).

96. The formulation of the oven cleaner sold to Bissell by Capitol Packaging Co., in November, 1962, thus contained over 50% water, 2.8% free sodium hydroxide, a surfactant, and a humectant.

97. The oven cleaner sold to Bissell by Capitol Packaging Co., in November 1962 was packaged in a conventional

aerosol spray-type metal can containing, as propellants, 6% Freon 12 and 6% methylene chloride (DX 3). Freon 12 and methylene chloride are and were, in 1962, conventional propellants. Mr. Perry told the Patent Office that "the invention does not lie in any particular kind of propellant as long as it propels; . . ." (DX 75, p. 31).

98. Contrary to Shelco's contention that Perry was the first to overcome the alleged fear in the art that an aqueous sodium hydroxide solution could not be stored in a metal aerosol can without leakage, it appears from the testimony of Mr. Burkholder, Bissell's director of quality control from 1962 to the present, and Mr. Weiner, President of Capitol Packaging from 1955 to 1966, that no problem of can leakage was experienced by either Bissell or Capitol Packaging (246; 3288-89). This testimony is supported by the fact that a product manufactured according to the formula set out in Finding 93 was marketed by Bissell in a conventional metal aerosol can continuously from its introduction in November, 1962 until sometime in 1966, when the formula was modified (3287-88; 3297). It is also supported by Mr. Weiner's testimony that prior to November 1962, the formulation set out in Finding 93 was packaged in a conventional metal aerosol can and tested for shelf-life for a period of from nine months to one year without evidence of leakage problems (227). In addition, Mr. Burkholder identified DX 106 as a can of Bissell oven cleaner made in 1963 (3290-91). This can showed no signs of leakage.

99. Bissell did experience some occasional minor instances of can leakage, but similar can leakage was experienced by Shelco as well (246; 1110-11). There is no testimony that such leakage was due to anything other than inadequacy in the can's side-seam soldering or other can construction defects (1110-11; 3179-80).

100. As demonstrated in Court by Dow, the Bissell oven cleaner of DX 106, which was made in 1963, but contained

the same formula and propellants as used in November, 1962, was sprayed from the can and was deposited on a metal surface in the form of a stable foam (3292). The Court has evaluated the later spraying from the same container by Shelco, again in the form of a stable foam, and Perry's characterization of the spraying as "a classic example of a plugged valve," and finds such an attempted criticism of a seven-year old product to be inconsequential (3392).

101. Dow also conducted a demonstration in Court of the foam characteristics of Shelco's oven cleaner. This cleaner also sprayed from the can and was deposited on the metal surface in the form of a foam, but after a short period of time the foam had slid down the test panel onto the floor (2174-75).

102. The Bissell directions for use contained on DX 105 do call for the oven to be cool and the pilot light to be off. Nevertheless, Dr. Colburn testified that the Bissell aerosol-packaged oven cleaner, as sold by Capitol Packaging Co. in November, 1962, contained nothing, from a chemical standpoint, which would interfere with its use on an oven heated to "say, 180 degrees Fahrenheit" (89; 123). Dr. Colburn freely admitted that the *chemicals* methylene chloride and freon decompose to some degree when exposed to a flame, and that one of the many decomposition products "may or may not be a poisonous gas called phosgene" (123-24). He testified that if this gas were produced, it is in very small amounts (124). There is no testimony that the Bissell *oven cleaner* would produce any poisonous gas if exposed to a flame. To the contrary, Dr. Colburn testified that he personally had tested oven cleaners containing propellants such as methylene chloride on hot ovens (for purposes not related to this litigation or any of the defendants in this case) (126). It should also be noted that the propellant used in Shelco's cleaner (butane) is highly flammable by

itself (2542), but apparently this does not prevent its use as the propellant in the oven cleaner composition.

103. The court finds that the Bissell cleaner sold by Capitol Packaging Co. in November, 1962 was suitable for use on a hot oven. In addition to the supporting testimony of Dr. Colburn, this finding is also corroborated by Mr. Burkholder's testimony that he knew of no problem or complaints arising from the use of methylene chloride or Freon 12 as the propellants in the Bissell cleaner (3289), and the fact that Perry himself could not name one specific complaint arising from his extensive use of concentrated methylene chloride solution (up to 70%) in paint cleaners and degreasers (2494-97).

104. While Shelco now expresses great concern over the possible production of small amounts of phosgene, the patent does not warn against the use of either of these propellants, and the claims were intentionally drafted broad enough to cover their use. (See Finding 97.)

105. Shelco's position, as stated in answer to Dow's interrogatories is that the *composition* claims of the patent in suit are infringed by the manufacture or sale of an oven cleaner product which comes within the language of its composition claims, regardless of whether the product is actually used on a hot or cold surface (804-05). Thus, the expression "for application to a hot oven", contained in all of the *composition* claims, interpreted most favorably for Shelco, can mean no more than that the composition must not contain any material which would make the cleaner obviously objectionable for application to a hot oven.

106. The Bissell oven cleaner made and sold by Capitol Packaging Co., in November, 1962 was an aerosol metal can-packaged oven cleaner containing over 50% water, 2.8% sodium hydroxide, a surfactant, and a humectant, as called for by the *composition* claims of the patent in suit. It was suitable for application to a hot oven.

107. The manufacture and sale of the Bissell oven cleaner by Capitol Packaging Co., more than one year before Shelco's first filing date constitutes a prior public use and sale of the invention covered by the composition claims of the patent in suit.

E. *The Winbro 403 Oven Cleaner*

108. In October, 1962, the patentee made and sold a batch of oven cleaner under the designation "Winbro 403" (DX 54, 55, 82, 83A, 83B; 821-22). This cleaner was made from the formula set out as the Example in the patent, without the furfuryl alcohols. It contained over 50% water, 3% sodium hydroxide, a humectant, and a surfactant as called for by all of the claims. This oven cleaner was sold in bulk form in a 30 gallon drum (821; DX 83A, 83B).

109. In October, 1962, the patentee also made a 20 gallon batch of the oven cleaner described in Finding 108 (820). This 20 gallon batch was packaged in plastic squeeze bottles of the type used to package the Beam oven cleaner (821). It was used for test purposes, and, in addition, a bottle of this oven cleaner was given to Dorothy Hall, a home economist for Vaughn Electric Co., of Somerville, Massachusetts, prior to December, 1962 (822; 615-16). This bottle was given to Mrs. Hall without any restriction as to confidentiality (620-21).

110. The October 1962 bulk sale of 30 gallons of Winbro 403 (the cleaner which is the example of the patent in suit without the furfuryl alcohols), more than one year before the filing date of Perry's first application, constitutes a "public use or on sale" of the composition invention covered by the non-catalyst claims of the patent in suit, within the meaning of 35 U. S. C. § 102(b). The package in which the cleaner was sold is immaterial. The combination of a known package and the cleaner is a matter of choice which is not only obvious under 35 U. S. C. § 103, but

which may be disregarded as an inconsequential difference under 35 U. S. C. § 102(b). This is particularly true where as here, the idea for the aerosol-packaging of the Perry cleaner originated not with Perry but with Vaughn Electric Company (Finding 81).

111. The 20 gallon batch of Winbro 403 packaged in Beam-type plastic squeeze bottles, constitutes a "public use or on sale" of the composition covered by the non-catalyst claims of the patent in suit, for the same reasons set out in Finding 110.

F. *The Work of Boyle-Midway*

112. Dr. Myron Lover, the holder of a Ph.D. in Chemistry (954), was employed by Boyle-Midway in its research and development department beginning in 1951 (956). This was prior to the time when Boyle-Midway acquired the Easy-Off brand paste oven cleaner from Frank Wolcott.

113. Boyle-Midway's first serious efforts toward developing an aerosol oven cleaner were largely prompted when the successful marketing of an aerosol caustic spray foam product under the trademark HEP began to eat into the sales of Boyle-Midway's Easy-Off paste oven cleaner (DX 581). This product was the commercial embodiment of the Perlman patents (2018). Dr. Lover was assigned the project to develop and did develop a non-caustic aerosol formula for consumer panel testing against HEP. In May of 1962, Dr. Lover's formula 222-97 was tested against the HEP aerosol bomb (1986, 1987, DX 583). The results of the test showed that the Boyle-Midway product lost out to HEP by a score of almost 2 to 1 on all performance characteristics (DX 582, p. 2, 1962). Boyle-Midway management, who until that time had been reluctant to market a spray caustic, then concluded, on the basis of HEP's market success, that a spray caustic was a necessary answer to the challenge of HEP-type oven cleaners.

114. Dr. Lover, who was responsible for oven cleaner formulation at Boyle-Midway, received a directive from his management in the early summer of 1962 to develop a caustic spray-type oven cleaner to compete with HEP (1963, 1964).

115. Within weeks of the instruction, Dr. Lover, assisted by William Ball, a technician working under his direct supervision, developed a series of formulas containing sodium hydroxide, water, and a propellant. In addition, some contained a humectant (glycerin), and some contained surfactants (1992, DX 584). This work, recorded on July 23, 1962, represented Dr. Lover's first effort to obtain an aqueous caustic spray oven cleaner (1992, 1994, DX 584).

116. Shortly thereafter, a formula (262-5C) developed by Dr. Lover containing sodium hydroxide, a surfactant (Deriphat 151), a fatty acid (Dresinate TX), another surfactant (QS-30), glycol ether (2LM) and water was tested by Mike Liccione, an employee of Boyle-Midway, at his home. Liccione reported that the product was satisfactory for cleaning his oven (DX 585, 1998).

117. On October 1, 1962, some crystallization in formula 262-5C was observed (DX 589). On October 2, 1962, this problem was solved by lowering the over-all concentration of the solids and adding more water proportionally (DX 90; 2007).

118. As a result of this solution, a formula was adopted which showed no crystallization after two months storage at room temperature (DX 590). This formula, after being re-labeled 262-91, was assigned the manufacturing standard number 6-53 (PX 53, 2119). The formula contained 9.07 per cent by weight of a 50 per cent solution of sodium hydroxide (roughly 4.5 per cent sodium hydroxide), 2.03 per cent of Deriphat 151 (an amphoteric surfactant manufactured by General Mills), 79.99 per cent by weight of demineralized water, 2.43 per cent Triton QS-30 (a phosphate-

type organic surfactant), 1.62 per cent Dresinate TX (a fatty acid), and 4.86 per cent Ucar 2LM (a dipropylene glycol monomethyl ether) (PX 53, 2092-2098), the latter being a humectant having but one (OH) group and hence not properly identifiable as either a glycol, a glycerol or a polyhydric alcohol (2160). The same would be true of a tripropylene glycol monomethyl ether (2160).

119. In response to a request by Dr. Lover (DX 594-2, 2021), a one thousand can plant batch of the formula was run on December 12, 1962 (DX 597, 2025). The 1,000 can batch was run in tinplate, seamed containers with 2% solder, as supplied by Continental Can Company. Precision brand valves and buttons were used (DX 599, 2038).

120. By February 26, 1963, Dr. Lover's formulation work was considered complete and the product was turned over to the In-line Product Laboratory and taken out of Dr. Lover's hands (2042, 2043, DX 601).

121. On or about March 5, 1963, 200 cans of formula 6-53 from the plant production run were distributed to employees and friends of employees of Boyle-Midway, and of Whitehall Laboratories, in various parts of the country (2133-2139). They were used in a blind, paired comparison test with HEP oven cleaner. There is no evidence that the panel members were under any injunction of secrecy or that their use or disposition of the oven cleaner was restricted in any way.

122. The results of the blind, paired comparison test (DX 603) showed that the Boyle-Midway formula 6-53 in the aerosol container was superior to the HEP aerosol product marketed at that time (DX 603, p. 3). A management decision to go to full production for national marketing was made. Arrangements were made to have an outside contract filler produce the Easy Off spray oven cleaner (2052).

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123. In the Fall of 1963, while arrangements for production were going forward with an outside contract filler, several cans of the original 1,000 can plant batch run in December of 1962 were found to be leaking (DX 605, 2061). As a result, production was ordered halted (PX 39, 1925) for a reexamination of the product. This reflected Boyle-Midway management's cautious attitude in marketing caustic products for use by a housewife. The evidence is conclusive that Plaintiff experienced similar leaker problems. The patent in suit neither describes such a problem nor suggested any solution (1464).

124. Formula 6-53 was developed prior in time to Perry's work; it was publicly used in March 1963 without injunction of secrecy; and it was never abandoned, suppressed or concealed. Its use was discontinued for reasons not pertinent to the Perry patent, as indicated by a letter from C. K. Thompson, a vice-president of Boyle-Midway, to W. K. Eastham, another vice-president, dated January 16, 1964 (DX 606), in which it was suggested that formula 6-53 be marketed in a seamless can. Only the less-preferred aesthetics of the 2-piece can (certainly not within Perry's invention) prevented this (1972-73).

125. Dr. Lover did not participate in any further oven cleaner formulation work at Boyle-Midway. He left the field of oven cleaner work in January 1964 and had no contact with the field since that time until this trial. Subsequent work on oven cleaners at Boyle-Midway was done by individuals not previously experienced in oven cleaner formulating. Dr. Lover testified in person at the trial and his testimony was credible. It is not necessary to determine whether Dr. Lover qualifies under 35 U. S. C. § 102(g) as a prior inventor of the subject matter of the Perry patent. (No patent application was filed on Dr. Lover's 6-53 formula.) In any event, he qualifies as a "person having ordinary skill in the art" (35 U. S. C. § 103) "at the time the invention was made", and his work makes it clear that

aerosol-packaged, alkali metal hydroxide, water, surfactant, humectant formulations for cleaning ovens (suitable for use on heated oven surfaces) were obvious to him at that time.

OBVIOUSNESS

126. The use of humectants (including the interchangeability of propylene glycol and glycerine) and surfactants in cleaning compositions was well known, prior to Perry's invention, as was the use of aqueous solution oven cleaners having less than 10% sodium hydroxide.

127. It was well known in the prior art that heat would speed a chemical reaction, including the chemical reaction between oven soil and an alkali. (See, e.g., Finding 41; DX 503; 2064; DX 72, Tabs 1, 3, 5.) It was likewise well known in the prior art that aqueous alkali metal hydroxide solutions, in the concentration claimed by the patent, could be sprayed on a hot oven to speed up the cleaning operation, as shown by Beam and Dip-Away (DX 19; DX 22; DX 503).

128. It was well known in the prior art that an aqueous alkali metal hydroxide solution, in the concentration claimed by the patent in suit, could be packaged in and sprayed in the form of a foam from an aerosol spray-type metal can, as shown by Capitol Packaging and Bissell, John Sullivan, and Dr. Lover (Findings 92-107; 43-58; 112-125).

129. In view of Findings 127 and 128, the subject matter claimed by Perry would have been obvious to one skilled in the art at the time the alleged invention of the patent in suit was made. The formulations herein set out were subject to determination by common analytical methods (81-82; 88; 531-32; 3347-48).

130. Likewise, it would have been an obvious matter of choice at the time the alleged invention of the patent in suit

was made to have added or substituted a propylene glycol or glycerine humectant to the oven cleaners of Bissell, Sullivan, or Dr. Lover, and it also would have been obvious to apply the Bissell, Sullivan or Lover oven cleaner, like Beam and Dip-Away, to a hot oven, adjusting the type of conventional propellant, if such were considered desirable.

131. When this case first came before the Court at a pretrial conference in chambers, Shelco stressed the uniqueness of the application to a hot oven. When the Beam and Dip-Away products were discovered, the importance of a foam from an aerosol dispenser was stressed. When the Sullivan, Bissell, and Lover aerosol oven cleaners were put before the Court, Plaintiff began to talk of specific concentrations of ingredients not found or distinguished in the claims and of non-claim attributes such as superiority against side seam leakage. When Sullivan and Bissell were shown to have no substantial leakage problems, then Plaintiff stressed commercial success.

132. There is no claim in the patent which calls for a foam, nor is there any statement in the patent as to the superiority of a foam as opposed to a spray. In fact, the patent repeatedly refers to a "foam or spray" and if any distinction was intended, every one of the claims is specifically limited to a spray and not to a foam. The use of a foaming aerosol oven cleaner was not new with Perry. The Perlman patents (HEP) specifically disclose aerosol oven cleaners which foam (DX 72, Tabs 6, 7). The Bissell, Sullivan, and Lover products foamed (Finding 128). Nor is there language in the patent which states that propylene glycol (in any amount, much less the 20% used in Jifoam) is a unique safener. The patent merely states that "propylene glycol can be replaced by any compatible humectant", and that *any* such humectant, generally, "inherently reduces the irritating effect of the caustic on the skin." (DX 77, Col. 3, lines 41-52). At Col. 2, lines 32-43, the

patent states that the use of humectants "such as a *glycerol or* glycol" reduces the irritating effect of sodium hydroxide (Emphasis supplied).

133. Where differences, if any, between the subject matter covered by the patent in suit and the prior art exist, they are inconsequential, and are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

COMMERCIAL SUCCESS

134. In support of the patent, Shelco has relied heavily on two separate aspects of commercial success of its oven cleaner, Jifoam, as evidence of invention. The first is Shelco's contention that Jifoam was quickly accepted in the marketplace and grew from nothing to an important factor in the market in a short period of time (3138). The second is Shelco's related contention that because of Jifoam's success in the market, Dow and Boyle-Midway were forced to switch from the oven cleaners they had previously produced to products which come within Shelco's patent (2685). The activities of Dow and Boyle-Midway in this respect are also said by Shelco to evidence both long-felt need and unsuccessful attempts to produce a satisfactory oven cleaner prior to Jifoam (2644-47).

135. Commercial success is not relevant where, as here, the Court determines that there was no invention. Nevertheless, the Court, for completeness, makes the following findings with respect to Plaintiffs' alleged commercial success.

136. Before commercial success can be considered as evidence of unobviousness, the Court must determine that the alleged commercial success (here, of the product Jifoam) was attributable to the invention claimed by the patent

and asserted to be used by defendants and not some other factor.

137. It is undisputed that Jifoam now does contain and always has contained, a mixture of furfuryl and tetrahydrofurfuryl alcohols (1242-44; DX 523). Perry's original patent application set out the invention as being:

> "based on the surprising discovery that a mixture of furfuryl alcohol and tetrahydrofurfuryl alcohol catalyzes and enhances the cleaning action of the sodium hydroxide, especially at elevated temperatures, to such a great extent that the amount required can be reduced to less than ⅓ and such reduced amount has a markedly greater and faster cleaning power." (DX 74, p. 3, lines 21-27).

All of the claims in that original application were limited to oven cleaners having a mixture of furfuryl alcohols, and the disclosure of invention to Perry's patent attorney states that, "the ratio of tetrahydrofurfuryl alcohol is essential. It can be varied somewhat *but neither can be eliminated or replaced with like alcohols.*" (DX 63, emphasis added).

138. In the patent as issued, Perry changed the furfuryl alcohol from a necessary component of his composition to a desirable one but still emphasizes their importance:

> "The present invention is based in one of its aspects on the surprising discovery that a mixture of furfuryl alcohol and tetrahydrofurfuryl alcohol catalyzers (sic) and enhances the cleaning action of the sodium hydroxide at elevated temperatures." (Col. 2, lines 27-31).

Fifteen of the claims in the patent in suit are still limited to the furfuryl alcohols, sometimes described therein as a catalyst. None of these are asserted against defendants

in this case (Claims 7, 8, 9, 10, 11, 12, 13, 15, 20, 21, 22, 23, 24, 25, and 27). Plaintiff does not allege that any of the defendants in this case use any of the furfuryl alcohols in the accused oven cleaner compositions.

139. Shelco introduced Jifoam to the market regionally in New England with a saturation television, radio, and other media advertising campaign (1120). Over two million dollars were spent in so advertising Jifoam between 1963 and 1966 (799-800). Brochures distributed to the trade in the course of that campaign emphasized the importance of the new "catalyst" contained in Jifoam. An example is contained in DX 523, which reads:

> "'Jifoam' is a new and radical departure from conventional oven cleaners. *It derives its almost instant cleaning ability from the incorporation of a catalyst* that when heated in admixture with the base to above 140°F. saponifies grease and dirt faster than the strongest caustic mixtures on the market." (Emphasis added).

140. Shelco now says that the emphasis on the catalyst in the advertising campaign was merely a "sales gimmick", (1123-24) but it is the frequent use of this type of high budget sales gimmick that makes undiscerning reliance on commercial success a dubious test of invention or unobviousness. In this case, the period of time involved corresponded with an upsurge of housewife demand for convenience packaging of household products generally (3182-83). The market for aerosol oven cleaners was not created by Plaintiff's product, although consumer interest may have been heightened by Plaintiff's intense advertising campaign. [Plaintiff admitted that similar advertising campaign.] Plaintiff admitted that similar advertising campaigns by the defendants of their products cut deeply into Plaintiff's sales (1154-56).

141. In view of the above findings, the Court cannot find that any commercial success that Jifoam may have enjoyed was attributable to an inventive feature present in any claim of the patent asserted in this suit, and therefore such commercial success is not relevant to this case.

142. Plaintiff admits that Boyle-Midway does not use propylene glycol (2646), and since Plaintiff also admits that it cannot even show that Boyle-Midway ever did a complete analysis of Jifoam (2645), there is nothing in the record to support to [sic] charge that Boyle-Midway "copied" Plaintiff's product.

143. It is undoubtedly true that Jifoam's early success in the New England market did not go unnoticed by Dow's marketing personnel. As Mr. Foster, Dow's Brand Manager, testified, Dow was always seeking to improve its products and to meet or better its competition (3044-45). It is also true that Dow modified its oven cleaner after Jifoam was on the market. This modified cleaner does not contain furfuryl alcohols and, unlike Jifoam, does contain ammonia (3042-43). It is not a "copy" of Jifoam.

144. The evidence shows, and Shelco admits, that Dow, in the common practice of monitoring oven cleaner competition, knew of Jifoam in late 1963 (PX 102) and had analyzed Jifoam by early 1964 (PX 104; 2645). Jifoam was one of several oven cleaners being so monitored (see, e.g. PX 105). Dow's modified oven cleaner was put on the market in 1965 (2645). During the period from 1963 to 1965, as before and after, Dow carried out a systematic research and development program with respect to improvement in oven cleaners (see, e.g., DX 102; DX 103; PX 94-96; Dow's Answer to Interrogatory 57, 3340-41; PX 117, 119).

145. It is axiomatic that once Dow knew of Jifoam, its subsequent actions cannot be evidence of "*prior* attempts and failures" pertinent to the issue of obviousness. It is

also the fact that dozens of the Dow oven cleaning formulations which Shelco says were unsuccessful fall within the claim language of the patent in suit, a matter which will be discussed under the issue of indefiniteness.

146. The evidence shows that while the large national brand companies initially demonstrated reluctance to market a sprayable caustic oven cleaner, the reluctance was market oriented—not formulation or method oriented. It was motivated by consumer concern lest the spray might be inadvertently directed into the user's eyes rather than onto the oven surface (an event which could cause permanent eye damage) (DX 103-05; DX 107-14; DX 578; 1948-49). The market experience of Beam, Dip-Away, Bissell and, most particularly, HEP, demonstrated the acceptability of marketing a spray caustic oven cleaner.

147. Shelco makes much of the fact that Dow criticized Jifoam as being unsafe (PX 103). The fact is that that criticism was based on a toxicological test run by Dow (DX 99) which showed that Jifoam *did* cause permanent eye damage to the eyes of rabbits and "is a rather severe eye irritant" as well as being "corrosive to the skin." Because of this test and repeated adverse toxicological tests on Jifoam (3061-62; 3599-3600; DX 100, 109; PX 126) and other caustic compositions (DX 102-05; PX 97; PX 115), Dow steadfastly resisted the temptation to market a caustic spray, despite pressure from its marketing personnel (3620-21). It was not until Dow developed a product that passed the eye tests of its toxicological laboratory in 1965 that Dow permitted the marketing of its modified caustic oven cleaner (PX 115; PX 132; DX 113). This modified cleaner was not a duplication of Jifoam. Jifoam never passed the toxicological laboratory eye damage tests at Dow (DX 109).

148. In view of the above findings, the evidence of Defendant's "attempts and failures" relied upon by Shelco are immaterial to the issue of invention of the patent in

suit. The attempts were not related to efforts to duplicate any inventive feature of Jifoam—at best they were to avoid shortcomings in the well known spray caustic formulations then used—including those used by Perry.

OVERCLAIMING

149. The claims of the patent in suit call for the use of "a propellant—sufficient to force said composition [the oven cleaner] out of said [aerosol] container as a spray." (DX 77; Claims 1, 16). Perry told the Patent Office, "—the invention does not lie in any particular kind of propellant so long as it propels." (DX 75, p. 31).

150. Methylene chloride was at the time Perry filed his first application (DX 74) and has continued to be, a propellant used with aerosol containers (88, 121, DX 3). Freons such as Freon 12 and Freon 114 are also propellants used with aerosol containers (86-88, DX 3, PX 32). Therefore an oven cleaner and method for using the same, otherwise within the scope of the claims in suit, which has as a propellant methylene chloride, Freon 12 or Freon 114, falls within the scope of the claims in suit.

151. Perry asserts that the use of the conventional propellant ingredient, methylene chloride in the Bissell product, makes Bissell unsuitable for use on a hot oven (2378-83). This unsupported testimony is contradicted by Dr. Colburn (89-90). If, however, Perry's testimony is accepted, the claims in suit, all of which include this propellant, are invalid for overclaiming since they cover inoperative subject matter.

152. The same can be said of Plaintiff's criticisms of Dr. Lover's 6-53 formula. The modest leaking problems encountered with the 6-53 formula when using seamed cans are precisely the type of leaking problems encountered by Plaintiff. If Plaintiff's argument that the 6-53 formula

(with Freon 12 and Freon 114) was inoperative (due to the leakers), then the claims in suit, all of which read thereon, are invalid for overclaiming since they cover inoperative subject matter.

153. A number of the claims in suit (DX 77, Claims 2, 5, 19, 28, 31, 32) call for a "surfactant". Perry told the Patent Office, "—nor, does the invention lie in any particular surfactant, so long as it has the surface active properties inherent in surfactants." (DX 75, p. 31). Perry now asserts that the surfactants in the 6-53 formula would not perform as good foaming agents (2438-2440).

154. This assertion is contradicted by Dr. Lover (2039-42). If the assertion is accepted, the claims calling for a "surfactant" are invalid for overclaiming since they cover inoperative subject matter.

155. Other claims in suit call for the presence of a "humectant," which can be a glycerol, glycol or any alcohol having more than two hydroxyl groups (Finding 15). Sullivan's OC No. 1 formula containing Span 80 and Tween 80 are within this meaning and scope of the term "humectant" as it appears in the claims in suit (3369). If, as Perry contends, the formula would not be suitable for use on a hot oven, the claims which generically call for a "humectant" or "polyhydric alcohol humectant" are invalid for overclaiming since they cover inoperative subject matter.

156. Shelco also contends that dozens of Dow oven cleaner formulations were tried in the lab, but were unsuccessful, for one reason or another (Pl. Pre-trial Brief, p. 33-35; DX 101-102; PX 117). However, these Dow oven cleaner formulations are within the scope of the claims of the patent in suit. If Shelco's contention with respect to these formulations is accepted, the claims read on inoperative subject matter and are therefore invalid for overclaiming.

156A. It follows from the foregoing (Findings 149-156) that the claims in suit which contain no limitation to a "surfactant" and/or a "humectant" are also invalid for overclaiming (if Plaintiff's contentions of inoperativeness of prior art references are to be accepted) since they read on subject matter which lacks ingredients which Plaintiffs contend are the sine qua non of their invention.

EVALUATION OF EXPERT TESTIMONY

157. In view of the circumstances of this case, the Court deems it advisable to comment briefly on the nature of the expert testimony presented by the parties.

158. Mr. Perry conceded that the amount of propellant was critical and that the critical amount was different for different propellants (2691-97). He failed to point this out in the patent application, and therefore did not point out the best method of practicing the invention as required by 35 U. S. C. 112. He also failed to point out the best method of practicing the invention in that he testified that a particular nozzle was required but did not identify this type of nozzle in the application (1173-76).

159. Mr. Perry graduated in Chemical Engineering from North Carolina State College in 1940 and then spent the next eleven years with Lever Brothers working on soap, except for a period in the Navy (952-53). He then formed Winfield Brooks Company, a partnership, (later a corporation) in 1951 (955). In 1961 Mr. Carpenter (President of Shelco) became a preferred stockholder and officer of Winfield Brooks, but was later bought out by Mr. Perry (1082; 1985-87).

160. The Winfield Brooks Company had a number of early products. Much of the work at Winfield Brooks, as shown by laboratory notebooks, consisted of obtaining a product then on the market and duplicating it or copying it,

sometimes at the request of a customer and sometimes otherwise (1394-1400; DX 82).

161. As a witness at his deposition Mr. Perry avoided questions which involved expert opinion as to what would happen if variations in his oven cleaner formulation were made: in his deposition he denied ever having carried out an experiment in which he compared the effects of caustic soda and sodium metasilicate (2333); he denied ever having tried sodium metasilicate in an oven cleaner (2334); he denied knowing what would happen if he replaced caustic soda in an oven cleaner with sodium metasilicate (2334); he denied ever having made a test to see whether the action of an oven cleaner was due to OH ions or to un-ionized sodium hydroxide (2337); he denied having made a test to see what would happen if you added sodium silicate to any example of the patent (2337); he denied knowing whether it would make any difference in the activity of the material (2338-39); he admitted that he had nothing in his chemical background which would tell him whether the addition of a silicate to caustic soda would make any difference (2339); he did admit that sodium orthosilicate was a mixture of sodium hydroxide and sodium silicate (2339). In spite of his self-proclaimed ignorance on technical matters closely related to the subject matter of his patent, Perry was selected by Plaintiffs as their sole technical expert. Perry was a highly motivated witness who stands to benefit substantially from a finding upholding the validity of his patent. Under all of the circumstances of this case, the Court feels that Plaintiff's unexplained failure to produce an independent expert to corroborate Perry's otherwise unsupported testimony on technical matters, (in conflict with the testimony of Defendants' experts) seriously detracts from the weight to be accorded Perry's testimony.

162. Perry's lack of knowledge on fundamental, easily-checked matters was striking. He did not know what a

glycol was although that is fundamental to his patent (1260-61). He was even uncertain about what glycerol was (1262). He was vague on whether sodium orthosilicate was a mixture or a chemical compound (2355-59; 2508-11). On things not so easily checked he gave many opinions which, where they were checked, were grossly inaccurate. He said that a chelating agent would cause corrosion (2423-26). This opinion was flatly rejected by Ross who testified that a widely used cleaning material was used in open vessels of mild steel using 3% caustic solution and elevated temperature without causing corrosion, and that the same material was shipped in ordinary steel containers as a 50% caustic solution, even though it contained a substantial portion of sodium gluconate, one of the best chelating agents (3148-58).

163. Perry testified that mixtures of silicate and phosphate could not be packaged in steel drums in the presence of a chelating agent, (2423-26) but Ross showed that there was a standard military specification for such material in 50-gallon steel drums and that there was no corrosion problem (3148-58).

164. Perry also testified that the presence of sodium silicate would clog aerosol containers, but he admitted never having tried it, (2353-54) and Burkholder contradicted Perry's blanket statement by showing that the Bissell aerosol oven cleaner, which contained sodium silicate, had been sold for years without such difficulty (3293).

165. The court finds that Perry's opinions as an expert do not carry weight. On the other hand, Dr. Colburn and Dr. Lazo, who testified as experts for the Defendants, exhibited a firm command of the chemical subject matter about which they were testifying, and demonstrated neither bias nor prejudice. The Court finds their testimony credible and, when in conflict with that of Perry, credits their testimony. While presented as fact, as opposed to expert,

witnesses, the Court was also impressed with the chemical expertise and credibility of Dr. Myron Lover and of John J. Sullivan whose testimony was fully in accord with that of Defendants' experts Drs. Colburn and Lazo.

LICENSE TO FILE FOREIGN APPLICATIONS

166. On August 18, 1964, Perry filed a Canadian application, Serial No. 907,718, (DX 608) and on September 8, 1964, he filed a Great Britain application No. 36735/64 (DX 607). Each of these applications included a claim directed to the alleged invention of a method of using an oven cleaner not restricted to the inclusion of the catalyst.

167. The only foreign license which was ever sought from the Commissioner of Patents and which was ultimately granted, was filed on January 8, 1964 and covered an invention for an oven cleaner restricted to the use of a catalyst (DX 609). No license to file foreign patent applications including the substance of Claim 11, added by amendment to Perry's first United States application on April 20, 1964, (DX 74, p. 16) was ever sought or obtained (DX 610).

FRAUD

168. The patentee, Kenneth E. Perry, at all material times has been president of a small chemical company known as Winfield Brooks Company (1082). Perry was and is in charge of all technical activities in this company including the wording of the labels on the oven cleaner product (994-96; 2316; 2453-55); he also approves all expenditures of money (2292-93; 751). Perry claims to have been the inventor of the composition and method of the patent (DX 74, p. 15; DX 75, p. 15, 16; DX 76, p. 17-18).

169. Perry who resided in the Boston area then and now, states that he made the oven cleaner composition

covered by his patent claims (but without the furfuryl alcohols and not in an aerosol container) on one morning, a Saturday, September 15, 1962 (1017; 1390-91; DX 81; DX 88). This is said to be shown by a single notebook entry of the formula allegedly made by Perry on that date (DX 81). No other documentary evidence of the invention has been offered. No variations in arriving at this formula are shown, as would be characteristic of one working out a problem. No comparative tests are shown, nor were any preferred ranges suggested or tested.

170. During 1960 and 1961, Winfield Brooks worked on various paste-type oven cleaning formulations, none of which were put on the market (DX 80; 1364-69). There is no record of any work on any oven cleaners being done at Winfield Brooks between early 1961 and September 15, 1962.

171. The Beam oven cleaner was sold in the Boston area beginning in 1959 and continuing through at least all time periods relevant to this suit (DX 28-32; DX 35A-50; 701-02). One of the distributors of the Beam oven cleaner in the Boston area, beginning in the summer of 1962, was one Fred Hannon (374-76; 709-11). Hannon was supplied with the Beam oven cleaner in gallon containers and in the squeeze bottles represented by DX 24 (722-23; 768). He was also supplied with literature describing the product and its method of use (400-01). In September, 1962, Hannon called on Perry in response to Perry's advertisement for a salesman (1356-58). The job had been filled, but, according to Perry, Hannon "was a pretty good salesman and he saw what we were doing, so he talked his way into representing some of our industrial products." (1002). Hannon worked on a part-time basis from September, 1962 until February 17, 1963 when he became a full-time salesman (1358-59).

Findings Adopted by the District Court

172. On September 15, 1962, the composition formula shown in the Example of the patent in suit, except for the furfuryl alcohols (which were not in the Beam oven cleaner), appeared in Perry's notebook, despite the fact that no work had been done on oven cleaners by Perry for over a year and a half previously (1009-17; PX 133, pp. 109-11). On Monday, September 17, 1962, before any sales had been made by Hannon, he received his first payment from Perry (said to be an "advance") (DX 90; 2479).

173. The Beam oven cleaner had been sold, prior to September, 1962, in the Boston area and elsewhere, by Hannon and others, under the name Beam "Wipe Away" Oven and Grill Cleaner (Finding 171). The heading on the September 15, 1962 notebook entry of Perry's formula reads, "Formulate 'Wipe Off' Type Grill and Oven Cleaner" (DX 81). There is no evidence of any product other than Beam sold under a similar name. There are multiple instances read into the record from Perry's notebooks which show a practice at Winfield Brooks of copying, duplicating, matching, or formulating products of others identified by their trade name (1394-1400; DX 82).

174. In October, 1962 and January, 1963, some 220 gallons of the September 15 formula oven cleaner were produced by Perry (DX 82; 1023-27). 30 gallons were shown to have been sold in October, 1962 (821; DX 83A; DX 83B). No sales records appear for the remaining 190 gallons, but Perry testified that at least some of this cleaner was packaged in plastic squeeze bottles and given away for demonstrations (1404-08; 821).

175. For example, in January 1963, Winfield Brooks sent to a home economist in the Boston area, Mrs. Dorothy Hall, several plastic squeeze bottles of an oven cleaner, first made by Winfield Brooks after September 15, 1962 and known as "Winbro 403" (821; 641-46). Mrs. Hall was given a Winfield Brooks Product Data sheet covering this product in February 1963 (DX 54; 649-50).

Findings Adopted by the District Court

176. The Winfield Brooks Product Data sheet contains three paragraphs setting out the method of use of the oven cleaner. These directions (55 words) are identical word-for-word, with the directions on the Beam label used prior to 1962. The list of 14 uses for the oven cleaners are also word-for-word, identical, the only difference being that the Product Data sheet has the uses arranged in vertical columns (Compare DX 54 and DX 24 or DX 19). These three paragraphs are as follows:

> 1. "Hold bottle upright and squeeze to spray liquid on soiled surfaces. Works faster on warm surfaces. (Non-inflammable)
>
> 2. Wipe clean with damp cloth when soil is soft, time may be 5 to 20 minutes depending on amount of soil.
>
> 3. Can be used for soaking purposes by adding 3 oz. to each gallon of hot water."

177. Perry testified that he was not the one who copied the Beam label and that he did not know of the copying, or even the existence of Beam before this suit was filed (1041-43).

178. Perry's testimony must be considered in the light of his personal and financial interest in the outcome of this litigation. One of the contingencies of the sale of Shelco assets to the Clorox Company is that Messrs. Perry and Carpenter (President of Shelco, Inc.) will receive many thousands of additional shares of Clorox stock if their patent is sustained (1129-30; 2477). Perry's testimony must also be considered in light of other testimony. A) He was the only person at Winfield Brooks with authority to authorize labels, etc., in 1962 (2453-55). B) Carpenter testified that he was aware of Beam in 1963 and that he saw it in gallon containers before July 1963 and in small ("possibly 8 oz.") plastic bottles after July 1963; (814-15; 1097) that

it was his practice to send competing products to Winfield Brooks for evaluation (1099). C) Hannon, who was an evasive witness on deposition, testified that he "could have" talked to Perry about Beam (775-76). D) Buck, who was a chemist employed by Winfield Brooks at the time of the alleged Perry invention testified that Hannon told him about a liquid oven cleaner for spraying on a hot oven in the summer or early fall of 1962 and that Beam was not unknown at Winfield Brooks (743-45). E) Buck further testified that on the eve of Buck's interview by Counsel for Dow, Perry called Buck and asked him not to tell Dow "anything" (747).

179. The court finds the evidence persuasive that Hannon revealed the Beam cleaner, its application to a hot oven, and its successful commercial acceptance by the public to Perry and that by a cursory examination of the product, a chemist such as Perry could determine that it was an aqueous sodium hydroxide solution. Seljan, in fact, did so duplicate Beam (857).

180. In spite of the facts that the directions for use (method) of Perry's oven cleaner had been directly copied from Beam, and that Beam was an aqueous caustic which could be easily analyzed, the existence of Beam was kept from the Patent Office by Perry and Shelco or its predecessors. Repeatedly, throughout the prosecution of the patent, the Patent Office was told that there was *no* teaching in the prior art of applying an aqueous caustic oven cleaner to a hot oven (Finding 20). In addition to knowledge of Beam by both Perry and Carpenter, it is clear from a memorandum written on October 7, 1966 by Perry's Washington patent counsel that Perry was aware that Perlman in his '409 patent application had taught the use of a caustic oven cleaner on a heated oven surface (DX 86, p. 30). This knowledge, despite express representations to the contrary made to induce patent allowance, was withheld from the patent examiner responsible for Perry's application who was never made aware of the full facts known to Perry.

181. The original Perry oven cleaner produced after Hannon's visit was not sold in aerosol cans. Perry at first denied any knowledge of the use of his oven cleaner in squeeze bottles of the Beam-type, but later admitted that there were ample supplies of these bottles available and that they may well have been filled with oven cleaner and given away, particularly to Vaughn Electric Company in the Boston area (Findings 174; 175).

182. The response achieved by Vaughn Electric from the dispensing of the original formula in conventional pressure atomizers was favorable, and it was Vaughn Electric that suggested, at least by February 13, 1963, that the product be packaged in aerosol containers. On February 13th (DX 58), Vaughn Electric actually ordered 100 cases of such aerosol-packaged material. The invoice covering this order was not found in Perry's files, although the evidence shows that such files were carefully maintained at Winfield Brooks. The invoice came to light only through the testimony of Mr. Matthews of Vaughn Electric Co., who produced Vaughn's copy of the invoice (3018-3021).

183. Four days after the receipt of the Vaughn Electric order, and the suggestion of the use of an aerosol package, Hannon was made a Sales Manager of Winfield-Brooks at a salary of $10,000 a year. No one connected with Perry has asserted a conception date prior to February 13, 1963 for packaging the oven cleaner of Winfield Brooks in an aerosol container. Carpenter admitted that the suggestion for an aerosol container came from Vaughn Electric (1088-89; 1158). Perry's testimony on the point can at best be described as at least ambiguous. There is absolutely no showing that an oven cleaner without the furfuryl alcohols was ever packaged by Perry in an aerosol container prior to December 3, 1963. Perry's written invention disclosure to his attorney (DX 63) indicates that Perry considered everything but the addition of the furfuryls to be old or

inoperative. As late as June 10, 1964, Perry had communicated no disclosure of any oven cleaner without catalyst to his patent attorney (DX 67).

184. There are no records showing any experimentation in packaging Perry's material in aerosol containers, nor of any problem in the selection of the proper type of container, propellant or valve. If there were any such problems, not only are there no records, but the patent itself is completely silent as to what type of container, what kind of valve, or what type of or proportioning of the propellant might be essential. Neville, part owner of Shield Chemical Company (aerosol packager for Perry), who would not be expected to give testimony biased in favor of Defendants, testified unequivocally that it was Carpenter and another, unnamed (contended by Defendants to be Hannon, and definitely not Perry), who first brought the oven cleaner composition to Shield for aerosol packaging (1427-28). This was quite definitely in the first several months of 1963 (1429, 1489). This corroborates the Court's finding that Perry contributed nothing to the subject matter of the claims in suit other than his version of the Beam formula. The idea for aerosol packaging was contributed by Vaughn, and carried into effect by Carpenter and the unidentified companion of Carpenter; and the details of aerosol packaging were contributed by Shield Chemical Company (1530-32).

185. The earliest date of which there is any record, or corroborated testimony, for the manufacture of the oven cleaner in an aerosol container by or for Perry is about March 13, 1963 (PX 58-62). There is no earlier date of conception proven, since the only earlier activity is evidenced by Carpenter carrying out the wishes of Vaughn Electric for an aerosol container and this cannot be considered as the conception of Perry. The fact of invention by Perry is not and cannot be corroborated on the existing record.

186. In addition to the above material misrepresentations to the Patent Office and to this Court, other material misrepresentations were made to the Patent Office.

187. At an interview following the final rejection of all claims by the patent examiner, in which Perry personally participated, the examiner requested formal proof of the safety of the oven cleaner (DX 76, p. 179). Tests were run, paid for by Shelco and the patentee, and those test results considered favorable were submitted to the Patent Office (DX 76, pp. 180-86).

188. The examiner accepted and relied upon the test results submitted, as evidenced by a memo written by Perry's Washington counsel, and subsequently allowed the patent. In the words of the Washington counsel, the examiner stated, "it was really the affidavits [on safety] that resulted in the favorable disposition of this case" (DX 63).

189. The examiner was unaware of the fact that Perry and Shelco had obtained other, adverse test results (the Foster D. Snell. reports, obtained at a cost of about a thousand dollars, 1333; DX 520-522) which indicated that the oven cleaner was a primary skin and eye irritant. He was not aware of this fact because it had been decided, again as shown by a memo from Perry's Washington counsel, that the adverse report which showed eye damage and severe irritation of all skin test sites might "offset the advantages" gained from the reports that were considered favorable and that therefore the adverse reports should be consciously and deliberately withheld (DX 71; production pages 3035-36).

190. At the time the allegedly favorable test reports were submitted to the Patent Office in response to the examiner's requirement for proof of safety (DX 76, p. 179), Shelco had received at least 38 customer complaints of

personal injury resulting from the use of this same oven cleaner (DX 524). No mention was made of these letters although letters considered complimentary of Jifoam were submitted to the Patent Office (DX 76, pp. 157-165).

191. Perry also conducted certain tests on compositions set forth in the Perlman '408 and '409 patents and their commercial embodiment, HEP, for the purpose of persuading the Patent Office that Perry's product was superior to the HEP oven cleaner. In an affidavit of March 24, 1966, Perry stated that he had followed the teaching of the Perlman patents as to the formulae and procedures to be used (1217; DX 75, p. 36). These tests of the Perlman compositions were conducted on a hot oven, with the reported result that the cleaning efficacy was poor compared to Jifoam (DX 75, pp. 36-37). Perry did not tell the Patent Office, though he admitted the fact at trial, that he had *not* followed the instructions of the patent which specifically state that the oven surfaces should be thoroughly wetted before application of the cleaner (1226-27), nor did he inform the Patent Office that he had specifically avoided using any examples from the Perlman patents which contained glycol humectants—a feature that Perry now claims gives his product remarkable advantages (1227-29).

192. Perry did not disclose to the Patent Office the sale or public use of his Winbro 403 formulation more than a year prior to his application date even though he stated in his application that the action of a "conventional pressure atomizer" produced precisely the same results as those produced by an aerosol container (Finding 18) and even though on April 20, 1964 he broadened his disclosure by inserting a claim which directly covered such a product (Finding 28). Neither did he tell the Patent Office of the prior sale of Instant-Off in aerosol cans to Vaughn Electric in March, 1963,[5] in response to an order placed by

[5] This sale was more than one year before the filing of the broadening amendment (DX 74, p. 15) on April 20, 1964.

Vaughn Electric on February 13, 1963 (DX 58). The oven cleaner sold, contained the composition set forth in Finding 12 (822; DX 82).

193. Perry deliberately withheld critical information from the Patent Office including the damaging Foster D. Snell Reports (DX 520, 521) and all information relating to the Beam Oven Cleaner which taught the use of an aqueous caustic surfactant humectant spray oven cleaner on a hot oven (Findings 169-182). Perry deliberately withheld from the Patent Office the full manner in which he conducted the comparative tests of the oven cleaner taught by the Perlman patents (Finding 192). As a result, the examiner was intentionally and materially deceived as to the state of the prior art at the time of the alleged invention and as to the asserted safety and superiority of Perry's product over the prior art.

194. This suit has been brought and maintained in a bad faith attempt to enforce a patent which Shelco knew or reasonably should have known was obtained as a result of fraud or material misrepresentations knowingly and deliberately made to the Patent Office.

195. This case is an exceptional case within the meaning of 35 U. S. C. § 285, justifying the awarding of reasonable attorney fees and expenses to Defendants.

Findings Adopted by the District Court

1. The Court has jurisdiction of the parties and subject matter of this action.

2. A patentee must be an inventor and he must have made a discovery.

Thompson v. *Boisselier*, 114 U. S. 1;
Garden v. *Herz*, 65 S. Ct. 1027, 1033 (1886).

3. An invention, to be patentable, must be novel, useful and not obvious.

35 U. S. C. 101, 102, 103;
Graham v. *John Deere Co.*, 383 U. S. 1, 12 (1966)

4. Under 35 U. S. C. § 102, a patent may be found invalid as being anticipated by the prior art even though not every element of the claimed invention is found in a single piece of prior art, provided the differences between the claimed invention and the prior art are immaterial differences which are mere matters of choice not of inventive significance.

Frantz Mfg. Co. v. *Phenix Manufacturing Co., Inc.*, F. Supp. , 164 U. S. P. Q. 381 (E. D. Wisc., 1970);
Tool Research and Engineering Corp. v. *Honear Corp.*, 367 F. 2d 449, 454 (9th Cir., 1966).

5. Under 35 U. S. C. § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art is to be resolved. Against this background, the obviousness or unobviousness of the subject matter is to be determined.

Graham v. *John Deere Co.*, 383 U. S. 1, 17 (1966);
Appleton Electric Co. v. *Efengee Electrical Supply Co.*, 412 F. 2d 579, 582 (7th Cir., 1969);

Gass v. *Montgomery Ward & Co.*, 387 F. 2d 129, 129-30 (7th Cir., 1967);
Deep Welding, Inc. v. *Sciaky Bros., Inc.*, 417 F. 2d 1227, 1232-1233 (7th Cir., 1969).

6. 35 U. S. C. § 112, requires that a disclosure of the invention, as defined in the claims, be in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use it. It further requires that the patentee must disclose his best method and composition. If he fails to do so, or the claims are so broad as to cover inoperative subject matter, the patent is invalid for indefiniteness and for over claiming.

Permutit Co. v. *Graver Corp.*, 284 U. S. 52, 60 (1931);
Halliburton Oil Well Cementing Co. v. *Walker*, 329 U. S. 1, 13 (1946);
Graver Tank & Mfg. Co. v. *Linde Air Prod. Co.*, 75 P. Q. 231, aff'd. 336 U. S. 271 (1949);
Deep Welding, Inc. v. *Sciaky Bros., Inc.*, 417 F. 2d 1227 (7th Cir. 1969);
Pemco Products, Inc. v. *General Mills Inc.*, 261 F. 2d 302 (6th Cir., 1958);
Libby-Owens Ford Glass Co. v. *Celanese Corporation*, 135 F. 2d 138 (6th Cir., 1943).

7. The *claims* of a patent are the sole measure of the grant.

Aro Mfg. Co. v. *Convertible Top Replacement Co.*, 365 U. S. 336, 339-340 (1961);
Universal Oil Prod. Co. v. *Globe Oil & Refining Co.*, 322 U. S. 471, 484-5 (1944);
Milcor Steel Co. v. *George A. Fuller Co.*, 316 U. S. 143, 145-6 (1942).

Findings Adopted by the District Court

8. Claims of a patent which fail to include one or more elements essential or critical to practice the invention are invalid.

Permutit Co. v. *Graver Corp.*, 284 U. S. 52, 58 (1931);
Technograph Printed Circuits Ltd. v. *Bendix Aviation Corp.*, 218 F. Supp. 1, 44 (D. Md. 1963), aff'd. per curiam, 327 F. 2d 497 (4th Cir., 1964).

9. A patent claim may not be given a narrow construction consistent with the disclosure of the patent to avoid the prior art or establish patentable invention and then be given a broad construction to embrace an accused device.

Graham v. *John Deere Co.*, 383 U. S. 1, 33 (1966);
Skirow v. *Roberts Colonial House, Inc.*, 361 F. 2d 388, 391 (7th Cir., 1966).

10. The presumption of validity of a patent is rebuttable and may be destroyed where, as here, pertinent prior art relied upon by the defendants was not considered by the Patent Office.

Appleton Electric Co. v. *Efengee Supply Co.*, 412 F. 2d 579, 581 n. 4 (7th Cir., 1969);
Novo Industrial Corp. v. *Standard Screw Co.*, 374 F. 2d 814, 827 (7th Cir. 1967).

11. The presumption of validity of a patent is weakened upon a showing of intentional or unintentional misstatements concerning the prior art made in the patent application or in prosecuting the application before the Patent Office.

Amerline Corp. v. *Cosmo Plastics Co.*, 271 F. Supp. 215, 230 (D. Ill. 1967) aff'd., 407 F. 2d 666 (7th Cir., 1969).

Findings Adopted by the District Court

12. Courts should scrutinize combination patent claims with care proportioned to the difficulty and improbability of finding invention in an assembly of old elements, especially where all of the claims of the patent in suit are directed to a combination which merely unites old elements with no change in their respective functions and which results in no effect greater than the sum of the effects of the elements taken separately.

Great Atlantic & Pacific Tea Co. v. *Supermarket Equipment Corp.*, 340 U. S. 147, 152-3 (1950);
Anderson's-Black Rock, Inc. v. *Pavement Salvage Co., Inc.*, U. S. , 14 L. Ed. 2d 158 (1969);
Continental Can Company v. *Old Cominion* [sic] *Box Company*, 393 F. 2d 321 (2nd Cir., 1968).

13. It is a well established principle that a mere carrying forward of a thought, a change only in form, proportions or degree, the substitution of equivalents which do the same thing in the same way, by substantially the same means, with better results, is not such an invention as will sustain a patent.

Smith v. *Nichols*, 21 Wall. 112, 119 (1875);
Schreyer v. *Chicago Motor Coil* [sic] *Corporation*, 118 F. 2d 852 (7th Cir., 1941);
B. F. Sturtevant Co. v. *Massachusetts Hair & Felt Co.*, 122 F. 1d [sic] 900, 907 (1st Cir., 1941);
Fowler v. *Sponge Products Corp.*, 246 F. 2d 223, 226 (1st Cir., 1957).

14. The production of a more efficient, useful and convenient article consisting of the adaptation of old and well known elements which does not involve the exercise of uncommon talents is not patentable invention.

Anderson's-Black Rock, Inc. v. *Pavement Salvage Co., Inc.*, U. S. , 24 L. Ed. 2d 258 (1969);

Great Atlantic & Pacific Tea Co. v. *Supermarket Equipment Corp.*, 340 U. S. 147, 153 (1950).

15. Mere improvement in result does not make patentable that which otherwise would not be patentable.

Anderson's-Black Rock, Inc. v. *Pavement Salvage Co., Inc.*, U. S. , 24 L. Ed. 2d 258;
Graham v. *John Deere Co.*, 383 U. S. 1, 36 (1965).

16. Even though it be assumed that the product of a patent filled a long felt need in the industry, that it met with great commercial success, and was copied, these facts alone could not impart patentability to a claim which is lacking in patentable invention.

Great Atlantic & Pacific Tea Co. v. *Supermarket Equip. Corp.*, 340 U. S. 147, 153 (1950);
Anderson's-Black Rock, Inc. v. *Pavement Salvage Co., Inc.*, U. S. , 24 L. Ed. 2d 258 (1969);
Milton Mfg. Co. v. *Potter-Weil Corp.*, 327 F. 2d 437 (7th Cir., 1964).
Goldman v. *Bobins*, 245 F. 2d 840 (7th Cir., 1957);
Circle S. Products Co. v. *Powell Products Co.*, 174 F. 2d 562 (7th Cir., 1949).

17. Commercial success of a device is irrelevant to the question of validity unless the specific features claimed in a patent are proved to be the cause of the commercial success.

Jungerson v. *Ostby & Barton Co.*, 335 U. S. 560, 567 (1949);
Endevco Corp. v. *Chicago Dynamic Industries, Inc.*, 268 F. Supp. 640 (N. D. Ill., 1967);
T. P. Laboratories, Inc. v. *Huge*, 371 F. 2d 231 (7th Cir., 1966);
Schreyer v. *Chicago Motorcoil* [sic] *Corp.*, 118 F. 2d 852 (7th Cir., 1941).

18. The uncorroborated testimony of an interested witness may be disregarded when it relates to the subject matter of his interest and is contradicted by other, disinterested testimony, including strong circumstantial evidence.

Girardi v. *Gates Rubber Co.*, 325 F. 2d 196 (9th Cir., 1963).

19. Circumstantial evidence may be more certain, satisfying, and persuasive than direct testimony.

Michalic v. *Cleveland Tankers*, 364 U. S. 325, 351 (1960);

Gearhardt v. *American Reinforced Paper Co.*, 244 F. 2d 920, 922 (7th Cir., 1957).

20. 35 U. S. C. § 120 requires that a revised application, to obtain the benefit of the filing date of the parent, must be supported by disclosure in the parent which meets the tests of 35 U. S. C. § 112.

Schriber-Schroth Co. v. *Cleveland Trust Co.*, 305 U. S. 47 (1938);

General Foods v. *Park* [sic] *Foods*, 19 [sic] F. 2d 944 (7th Cir., 1969).

21. Claims 1-6, 14, 16-19, 26, and 28-32 of U. S. Patent No. 3,335,092 are invalid under 35 U. S. C. §§ 102, 103, 112.

22. U. S. Patent No. 3,335,092, and all claims thereof, is invalid under 35 U. S. C. §§ 184, 185.

Beckman Instruments, Inc. v. *Coleman Instruments, Inc.*, 338 F. 2d 573 (7th Cir., 1964).

23. The complaint herein is dismissed with costs to defendants.

24. The counterclaims for a declaration of invalidity herein are granted.

25. This is an exceptional case within the meaning of 35 U. S. C. § 285 and defendants are awarded their reasonable attorneys' fees and expenses herein.

Blanc v. *Spartan Tool Co.*, 168 F. 2d 296 (7th Cir., 1948);

Townsend Co. v. *M. S. L. Industries*, 143 P. Q. 352 (N. D. Ill., 1964), aff'd. 359 F. 2d 814 (7th Cir., 1966);

Uarco Inc. v. *Moore Business Forms, Inc.*, 306 F. Supp. 369 (N. D. Ill., 1969).